Grade 3 - General Curriculum Outcomes

Number Concepts/Number and Relationship Operations

GCO A: **Students will demonstrate number sense and apply number-theory concepts.**

GCO B: **Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations.**

Patterns and Relations

GCO C: **Students will explore, recognize, represent, and apply patterns and relationships, both informally and formally.**

Shape and Space

GCO D: **Students will demonstrate an understanding of and apply concepts and skills associated with measurement.**

GCO E: **Students will demonstrate spatial sense and apply geometric concepts, properties, and relationships**

Data Management and Probability

GCO F: **Students will solve problems involving the collection, display, and analysis of data.**

GCO G: **Students will represent and solve problems involving uncertainty.**

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

i) construct and communicate number meanings, and explore and apply estimation strategies, with respect to whole numbers

SCO: By the end of grade 3, students will be expected to

A1 compare and order whole numbers to thousands

Suggestions for Teaching and Learning

A1 Students should be able to identify the greater of two whole numbers and order a set of numbers from greatest to least (or least to greatest). When modelling comparisons (e.g., 500 and 489), stress the importance of the digit in the hundreds place and that "89" is not enough to make 1 more in the hundreds place.

- ❑ Prepare a deck of number cards which contain both 2- and 3-digit numbers. Have the students deal all the cards face down to the players. Have each player turn the top card over; the one who has the greater (greatest) number "wins" both or all the cards in play. The winner is the one who has collected the most cards when all the cards are turned over.
- ❑ Ask: If □39 > 422, what can you say about □ ?
  If □39 >□87, what do you know about the missing digits?
- ❑ Provide a set of cards (10 - 15) with each card having a 2- or 3-digit number (4-digit when students are ready) on it. Ask the student to order the number cards from least to greatest and to explain how he/she determined the relative number size.
- ❑ Shuffle a prepared deck of 40 number cards (4 sets of 0-9). Have the student select three or four of the cards and arrange them to make the greatest possible number and the least possible number. Ask the student to model these numbers with base-ten materials.
- ❑ As a class activity, repeatedly roll a die and have the students fill in the digits, one at a time, on a place-value chart. Alternate by having them try to make the greatest number or the least number. Model the task by placing your digits on an overhead chart. Regularly ask questions such as, What do you need? What don't you want me to roll?
- ❑ A good estimation activity is plotting numbers on number lines.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

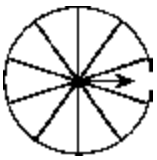
Performance

A1.1 Give the student some prepared cards with 3- and 4-digit numbers on them. Ask him/her to order the number cards from least to greatest.

A1.2 Show the numbers 501 and 398 and ask which is greater. Have the students explain their answers. Encourage them to use base-ten models in their explanations.

A1.3 Ask the students to enter a certain number on a calculator (e.g., 2235). Ask: How can you, without clearing the calculator, make the number 2435? (2446? 1234?)

A1.4 Give each of two students a spinner (as shown) with 10 numbers that are in the hundreds and/or the thousands. Have them spin at the same time. The one who spins the higher number gets a token. The students play until someone has gathered 10 tokens. Select numbers according to the students' level of understanding. (Numbers such as 345, 354, 381, 309, 1008, 1800, 1080, 1335, 1353, and 2000 would work well.)



Paper and Pencil

A1.5 Ask the student to write a number that is

- ten more than 165
- one hundred greater than 655
- between 463 and 474
- a little less than 300
- two hundred less than 206
- greater than 348 but less than 360, etc.

Interview

A1.6 Ask the student to explain why a 3-digit number is always greater than a 2-digit number.

A1.7 Ask the student to select 5 numbers between 600 and 630, and to write them in increasing order.

A1.8 Tell the student that *The Guinness Book of Records* reports each of the following to be the largest ever of its kind.

hamburger	2509 kg	doughnut	1700 kg
salami	678 kg	popcorn ball	1080 kg
ice cream sundae	377 kg	lollipop	1369 kg
Easter egg	4765 kg		

Ask the student to order the items from least to greatest.

Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

i) construct and communicate number meanings, and explore and apply estimation strategies, with respect to whole numbers

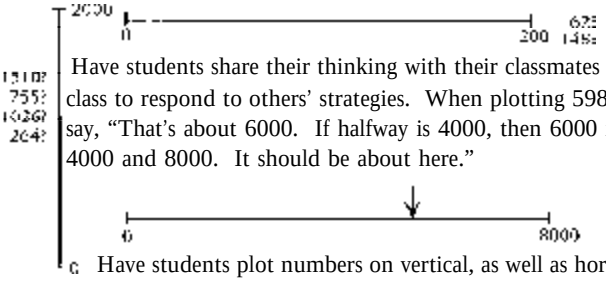
SCO: By the end of grade 3, students will be expected to

A1 compare and order whole numbers to thousands (Cont'd)

A2 estimate the size of numbers to the nearest ten or hundred

Suggestions for Teaching and Learning

A1 (Cont'd)



Have students share their thinking with their classmates and encourage the class to respond to others' strategies. When plotting 5980, a student might say, "That's about 6000. If halfway is 4000, then 6000 is halfway between 4000 and 8000. It should be about here."

❑ Have students plot numbers on vertical, as well as horizontal, number lines.

A2 Rather than rounding numbers in isolation, emphasis should be on rounding to estimate results of calculations in problem-solving contexts. Instead of simply applying the "5" rule (i.e., 5 or greater rounds up, less than 5 rounds down), students need to learn to do what makes sense in each situation. For example, it makes sense to *underestimate (rounding down)*

- the number of items you can buy with a fixed amount of money
- the distance you can travel on one quarter of a tank of gas

overestimate (rounding up)

- how much food to prepare for a party, to make sure there is enough
- the amount of string required to wrap a parcel

❑ Have students map out a street on which the houses are numbered in intervals of 10, with a bus stop at every tenth house. Ask students to choose an address and decide which bus stop they would use if they were tired.

Encourage students to use appropriate compensation techniques when estimating in calculation situations. For example,

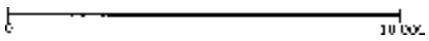
- when adding, rounding one number up and the other down is often a good technique (e.g., 32 + 45 becomes 30 + 50, while 27 + 45 becomes 30 + 40)
- when subtracting, rounding both numbers in the same direction tends to preserve the difference best (e.g., 45 - 32 becomes 40 - 30, while 45 - 27 becomes 50 - 30)

Note: It is important that these types of rounding situations be presented in real contexts.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

A1.9 Provide number lines for students, ask them to estimate where some numbers might lie, and to give their reasoning; for example, 2465.



Paper and Pencil

A2.1 Ask the student to explain how he/she would round two or three 2-digit numbers for an estimated sum. To assess the student's understanding of the compensation strategy, the following problem might be used: 38 + 48 + 35

A2.2 Ask the student to name some numbers that might be rounded to 120.

A2.3 Point out that when you go grocery shopping, you sometimes round each price to the nearest 50¢. Ask: Using this system, how much should you have estimated as the total for products priced at 79¢, $1.38 and $2.59?

Interview

A2.4 Tell the student that a number is rounded to 40. Ask: What might it have been?

A2.5 Ask the student to describe a situation in which he/she would use the number 500 as an estimate for 475.

A2.6 Tell the student that Jane estimated 82 - 47 by using 80 - 50. Without actually finding the answer, ask how he/she knows that Jane's estimate is low.

A2.7 Tell the student that Marla said, "To estimate 46 + 25, I would add 50 + 20." Mark said, "It should be 50 plus 30." Ask: Whose estimate was closer? Why?

A2.8 Tell the student that Patrick went to the store with a loonie. He estimated the cost as he picked up a 12¢ pencil, a 25¢ eraser, a 29¢ notepad, and a 19¢ pen. Ask: How might Patrick have estimated? Without finding the actual sum, do you think he had enough money?

Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

ii) concretely explore common fractions and decimals in meaningful situations

SCO: By the end of grade 3, students will be expected to

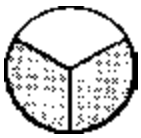
A3 use simple fractions to describe situations

Models must be used at all grade levels to develop fraction concepts adequately. Further, . . . children should have experiences with a wide assortment of models. (Elementary School Mathematics, pp. 222-23)

Suggestions for Teaching and Learning

A3 Students should continue to use simple fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{10}$, and any other fractions that come up in context. These fractions should describe

- parts of a whole

 (e.g., thirds)

- parts of a set

 (e.g., fourths)

Presenting fractions in context will make them much more meaningful to students. It will be natural also, when examining a situation involving a fraction such as $\frac{1}{4}$, to show the related fraction $\frac{3}{4}$. Always use a horizontal line when writing fractions.

❑ Explore fraction relationships among pattern blocks.

❑ Use coloured tiles to make a rectangle that is $\frac{1}{3}$ yellow and $\frac{2}{3}$ green.
Make another rectangle that is $\frac{2}{4}$ red and $\frac{1}{2}$ blue.

❑ Students might examine fractions of particular geometric shapes. For example:

$\frac{1}{2}$ of a rectangle

$\frac{3}{4}$ of a square

$\frac{1}{6}$ of a hexagon

GCO A: Students will demonstrate number sense and apply number-theory concepts.

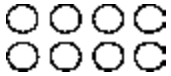
Suggestions for Assessment

Performance

A3.1 Ask the student to use multilink cubes to show that $\frac{1}{2}$ is less than $\frac{3}{4}$.

Paper and Pencil

A3.2 Ask the student to colour $\frac{1}{4}$ of the circles.



A3.3 Tell the student that Jack has a total of ten 2- and 4-hole buttons. Ask: What is the greatest fraction that can have 2 holes? What is the least fraction that can have 2 holes?

A3.4 Tell the student that Lee and Teddy bought their mother a gift for Christmas which cost $20. Lee paid $\frac{3}{4}$ of the cost, and Teddy paid the balance. Ask: How much did each pay? Provide coloured counters to help him/her solve the problem.

A3.5 Pair each student with a partner to solve this problem: Eight-year-old Samantha, whose birthday is January 25th, said, "I can't wait until I'm 8 and $\frac{11}{12}$." Ask: Why was she excited?

Interview

A3.6 Ask the student to tell why, whenever you see a representation of $\frac{1}{3}$, there is always a $\frac{2}{3}$ associated with it.

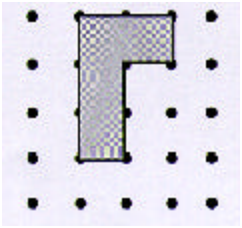
A3.7 Ask the student to describe how to find $\frac{1}{3}$ of a strip of 9 squares.

Portfolio

A3.8 Tell the student that you have 8 coins. Half of them are pennies. More than $\frac{1}{8}$ of them are quarters. The others are nickels. Have the student use coins to represent the situation. Ask: How much money might you have?

Presentation

A3.9 Ask pairs of students to explore the following problem and to present their findings to the class: This shape is $\frac{1}{2}$ of a larger one. What could the larger one look like? How many different possibilities can you find?



Invite students to create similar problems to challenge other groups.

Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

iii) read and write whole numbers and demonstrate an understanding of place value (to four places)

SCO: By the end of grade 3, students will be expected to

A4 demonstrate an understanding of base-ten groupings (units, tens, hundreds, thousands)

Suggestions for Teaching and Learning

A4 Although some students will have a clear understanding of the base-ten pattern of our place-value system, many will still be in the early stages of its development. It is important that students be provided with regular opportunities to strengthen their knowledge. It takes time for the students to thoroughly understand our base-ten system and to recognize and use the place-value notation.

Students should recognize that one thousand is just another expression for ten hundreds. (This may be extended to "two thousand is another way to say twenty hundreds," etc.) Continue to expect students to model numbers and to engage in trading activities.

- ❑ Say: Show me four hundred eighty-nine with your materials. If you add seven, how many do you have? What if you were to add another four? Explain your trading.
- ❑ Provide a shuffled set of 50 cards (5 sets numbered 0 to 9). Have a pair of students draw two cards and decide the greatest number they can make. Ask them to add this number in base-ten materials to the value currently on their place-value mat, trading when necessary. (For example, if pair one were to draw a 5 and a 7, they would add 75 to the chart.) Three cards may be drawn when students are capable of trading at this level.
- ❑ Have students play "Race For A Loonie." Ask each student to repeatedly toss a die and count out pennies on a mat. Ten pennies are exchanged for a dime, and ten dimes for a loonie.
- ❑ Ask the students to enter a number (e.g., 4567) on the calculator. Have them change the 5 to an 8 in one step (the 4 to a 6, the 6 to a 9, etc.).

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

Performance

A4.1 Ask the student to show twenty-eight hundred seventy-six with base-ten materials. Have him/her roll a die and add to his/her model until reaching at least three thousand.

A4.2 Have the students use a mat with sections marked off for $1, 10¢ and 1¢. Ask them to toss two dice, find the sum, and place the total on the mat. Have them exchange 10 pennies for one dime and continue until they have reached a dollar.

A4.3 Tell the student that Mary knows that she needs to collect 300 bottle caps for the contest and she already has 287. Show with the base-ten materials how many more she must collect to reach her goal.

Interview

A4.4 Have the students pretend they won three thousand dollars. Ask them to determine how many hundred dollar bills that would be and have them explain their method.

A4.5 Tell the student that Martin said the car cost thirty-four hundred dollars, while Sam said he thought it cost over three thousand dollars. Ask: Are they disagreeing? Explain.

A4.6 Show the student a number (8317, for example). Ask: What does the 3 represent in this number? What does the 1 represent? How many thousands are there?

Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

iii) read and write whole numbers and demonstrate an understanding of place value (to four places)

SCO: By the end of grade 3, students will be expected to

A5 record, model, and interpret numbers up to and including the thousands

Number sense develops over many years, and there may be a wide disparity between the concepts and skills of your third-grade students. The understanding they possess will be fostered if they model numbers in many ways and use numbers to describe real-world situations. (Curriculum and Evaluation Standards, Addenda Series, Third-Grade Book, p. 9)

The key instructional tool for developing the conceptual knowledge of place value and also for connecting these concepts to symbolism is the use of base-ten models. (Elementary School Mathematics, p. 157)

Suggestions for Teaching and Learning

A5 "Building" larger numbers with concrete materials helps students develop a better sense of those numbers. For example, when introducing 1000, it is beneficial to present it first as ten stacked flats. This helps students visualize 1000 more easily. Students who have had extended experiences with base ten materials will be able to visualize the models of numbers with minimal difficulty. In some cases, it is sufficient for them to draw the models. It is important, however, that proportional models continue to be used, rather than nonproportional ones such as an abacus.

It is also important to spend time developing the concept of zero in numbers. For some students, the number "3002" looks like "three hundred two." Students need many experiences using base-ten material to model numbers with zeros as digits.

After extensive work with the base ten materials, ask students to record numbers (e.g., three hundred forty; nine hundred eight; seven thousand sixteen; sixty-four hundred thirty-two; a number that has twenty-two tens and three ones). Experiences which involve interpreting numbers in different ways will help students to write numbers of the latter type. Invite students to take turns giving numbers for the class to write.

Introduce the "read, model, and record" triad. Students should be able to move easily from one form to another.
- Read a number and have them record and model it.
- Model a number and have them record and read it.
- Show the written number and have them read and model it.

Provide opportunities for students to interpret numbers in different ways. For example, 2936 may be interpreted as 2 thousands, 9 hundreds, 3 tens, 6 ones OR 29 hundreds, 3 tens, 6 ones, etc.

Note: These variations can and should be modelled using base-ten materials.

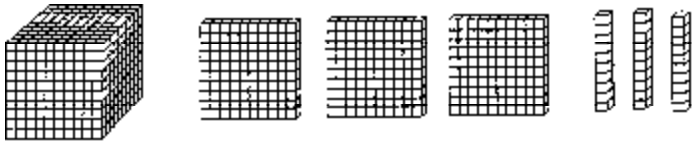
Exercises such as 432 = __h, __t, __o should be avoided because students do not need to understand the value of each digit to complete them correctly. Learning experiences such as the following are more useful.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

Performance

A5.1 Provide the student with a base-ten block representation of a number. Ask him/her to write and read the number that is modelled.



A5.2 Ask the student to model 2230 in more than one way, using base-ten blocks. For example, 1 thousand, 12 hundreds and 3 tens or 22 hundreds and 30 ones.

A5.3 Show the student 2006 written symbolically and ask him/her to model it. Then have the student read the number and express it in other ways.

A5.4 Ask the student to write a number which is a) 10 greater, b) 100 greater than a given number.

A5.5 Invite students to make up number riddles. Other students show their solutions to the riddles by building models with base-ten blocks. For example:

I am between 1100 and 1200.
My last digit is an odd number.
What is the least number I can be? The greatest?

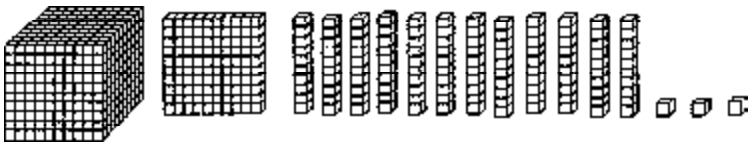
Paper and Pencil

A5.6 Read numbers or show models of numbers and have the student record them.

A5.7 Ask the student to describe different items that might cost about $1250.

Interview

A5.8 Ask the student to tell why the model below shows 1223.



Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

iii) read and write whole numbers and demonstrate an understanding of place value (to four places)

SCO: By the end of grade 3, students will be expected to

A5 record, model, and interpret numbers up to and including the thousands (Cont'd)

KSCO: By the end of grade 3, students will be expected to

iv) order whole numbers and represent them in multiple ways

SCO: By the end of grade 3, students will be expected to

A6 read numbers in several ways

Suggestions for Teaching and Learning

A5 (Cont'd)

- ❑ Create a number greater than 500 with 3 in the tens place.
- ❑ Provide a set of number cards, such as

One student chooses one of the numbers in his/her head, then gives clues to another student, based on different ways to read the number. The student should try to use clues which could apply to more than one number. For example, the clue, "there are more than 15 hundreds," eliminates 814 and 1462 from the group of five numbers.

A6 Students should understand that numbers can be read in more than one way. Experiences which involve interpreting numbers differently help students develop this idea. For example, 1236 may be read "one thousand two hundred thirty-six" or "twelve hundred thirty-six."

It is important to point out that both responses are correct, but sometimes one may be more appropriate or used more frequently. For example:

- She was born in 1900. (nineteen hundred)
- He will graduate in 2004. (two thousand four)
- The paint job on the car cost $2400. (Twenty-four hundred is used more often, but two thousand four hundred is also correct.)

Although students at this level are unlikely to be dealing with numbers to ten thousands, they should be aware that numbers greater than 9999 are written with a space and no comma (e.g., 10 453 which is read ten thousand four hundred fifty-three). Also, they need to understand that, when reading a number, the word "and" is reserved for the decimal and avoided in the middle of the number.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

A5.9 Ask the student to describe 4000 in more than one way.

A5.10 Ask: How many tens make 1000?

A5.11 Tell the student that Mary won $5000 in a contest. If she wants all her prize money in $10 bills, how many would she receive?

Performance

A6.1 Ask the student to use base-ten materials to represent 2047 in different ways.

A6.2 Ask the student to show with base-ten blocks that 132 is 13 tens and 2 ones.

Paper and Pencil

A6.3 Ask the student to record the number made up of 15 tens and 15 ones.

A6.4 Explain to the student that a number is made up of 42 tens and fewer than 5 ones. Ask him/her to write what it could be.

Interview

A6.5 Ask the student to read 3241 without using the word "thousand."

A6.6 Provide the student with the following table:

Dog Breeds In Canada

Breed	No. Registered 1995
Labrador Retriever	9471
Golden Retriever	8699
German Shepherd	8453
Shetland Sheepdog	4775
Rottweiler	4242
Poodle	4050
Shih Tzu	2895
Yorkshire Terrier	2458
Miniature Schnauzer	2381
Siberian Husky	2220

Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

iv) order whole numbers and represent them in multiple ways

SCO: By the end of grade 3, students will be expected to

A6 read numbers in several ways (Cont'd)

KSCO: By the end of grade 3, students will be expected to

v) apply number-theory concepts (e.g., place-value pattern) in meaningful contexts, with respect to whole numbers and commonly used fractions and decimals

SCO: By the end of grade 3, students will be expected to

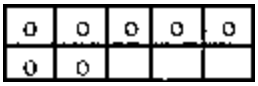
A7 extend the place-value system to model and record numbers involving tenths

Suggestions for Teaching and Learning

A7 To help students extend the place-value system to decimals, focus on the basic pattern of ten. Remind students that 10 ones make 1 ten, 10 tens make 1 hundred, etc. Then, extend this pattern to help students understand that it takes 10 equal parts (tenths) to make 1. Explain that the place to the right of the ones is tenths.

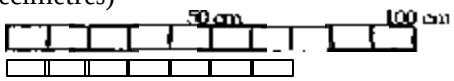
It is helpful for students to see tenths in a variety of models. For example, 0.7 (7 tenths) may be modelled using

-ten frames



-circle patterns

- base-ten materials. For example, 0.7 (7 tenths) of a metre would be 7 rods (7 decimetres)



-egg cartons with 2 sections removed

Note: The shift from a ten-frame base-ten, or other similar model representing 10 to it representing 1 is challenging for many students and will need to be reinforced through various activities.

- ❑ To foster understanding of decimals, it is important that they be read correctly. For example, 3.4 should be read as 3 and 4 tenths, not 3 point 4, or 3 decimal 4. It is also important that students understand the relationship between fractions and decimals.
- ❑ Invite students to predict the number of times a coin will land tails up when flipped 10 times. Have them check their predictions and record their data as a decimal and a fraction. Invite them to share their results with others.
- ❑ Ask students to circle about 0.4 of the dots without counting.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

A6.6 (Cont'd) Ask the student to read the number of registered dogs both ways (i.e., 2441 is two thousand four hundred forty-one or twenty-four hundred forty-one).

A6.7 Ask the student to explain why 320 is the same as 32 tens.

A6.8 Tell the student that, to subtract 132 from 500, Anne said, "500 is 50 tens, so I'll regroup one ten and that leaves 49 tens." Ask why this was a good strategy.

Presentation

A6.9 Ask pairs of students to discuss the following problem: Jane said that 421 has more tens than 139. Peter said that it has fewer. How can they both be correct? Share ideas in a class discussion.

Performance

A7.1 Ask the student to model 0.2 and 1.2, using ten frames.

A7.2 Show the student a handful of beans. Ask him/her to estimate how many would make up about 0.1 of the amount. Have the student explain the thinking involved.

A7.3 Ask the student to estimate and colour 0.1 of a rectangle.

Paper and Pencil

A7.4 Ask the student to continue the pattern.
0.7, 0.8, 0.9, ___, ___,

A7.5 Show a 2 x 5 grid and ask the student to colour 0.3 of it.

A7.6 Ask the student to record the number which is 0.2 less than 1.

A7.7 Ask the student to record numbers, such as four tenths, sixteen and seven tenths, four thousand ninety-nine and nine tenths, twenty-four
hundred six and five tenths.

Interview

A7.8 Ask: Why does the model below not show 0.4?

Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

v) apply number-theory concepts (e.g., place-value pattern) in meaningful contexts, with respect to whole numbers and commonly used fractions and decimals

SCO: By the end of grade 3, students will be expected to

A7 extend the place-value system to model and record numbers involving tenths (Cont'd)

A8 order and compare decimals to tenths

Suggestions for Teaching and Learning

A7 (Cont'd)

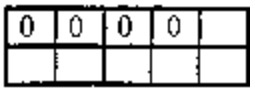
❑ Provide items and ask the students to measure them in tenths of centimetres.

Encourage students to explain the estimating strategies they used.

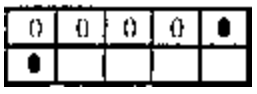
A8 When comparing or ordering decimal numbers, as with performing these tasks with whole numbers, students must realize that one must keep in mind several points.

- The whole number part of the number is a critical part for comparison. (e.g., 2.39 < 4.2 because 2.39 is not even 3 whole units.)
- When numbers have the same whole part, the decimal part becomes the critical part for comparison. (e.g., 4.3 is 4 and 3 tenths. This is less than 4.7 which is 4 and 7 tenths.)
- It is important to examine the placement of digits, not just the number of digits. (e.g., 6.2 and 40 both have 2 digits, but 6.2 is not even 7 whole units so it is much less than 40.)

Initially, when comparing two decimal numbers, it is helpful to use manipulative materials. By matching corresponding parts, students are able to see which number has more parts. The ten frame represents one unit, each box represents a tenth:



0.4



0.6 is 2 tenths more

It is appropriate at this level to use the symbols < and > to represent comparisons (e.g., 3.4 < 5.6).

Students should have opportunities to order a list of numbers.

❑ A possible activity, is to have students examine skating scores from a competition and decide who was in first, second, and third place. As a variation, invite three students to perform some "stunt" and have other students give a decimal score between 1 and 10 for each performance. Then ask students to decide first, second, and third place.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

A7.9 Ask: What fraction (in decimal form) of the letters in the word HAMBURGERS is vowels?

A7.10 Explain to the student that someone forgot to put the decimal in the number below. Ask where it could be if the number is less than 100.

1427

A7.11 Ask: How do you know 1.1 is greater than 0.4?

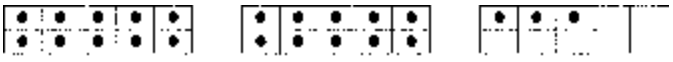
Portfolio

A7.12 Have the student explain why 3.2 is greater than 3, but less than 4.

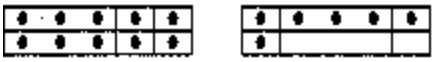
Performance

A8.1 Provide the student with models of two decimals. Ask him/her to model an amount between the two and tell you the decimal it represents.

A8.2 Provide ten-frame models of several decimal amounts. Ask the student to identify the decimals modelled and put them in order.



2.3



1.6

A8.3 Show the student a decimal amount such as 0.9. Ask him/her to record and model a greater amount.

Paper and Pencil

A8.4 Have the student complete a given place-value pattern.
(e.g., 2.9, ___, 3.1, 3.2, ___, 3.4)

Alternatively, ask the student to complete a list of numbers by considering the two numbers surrounding each blank.
(e.g., 3.4, ___, 4.7, 5.9, ___, 8.1)

Any number between 3.4 and 4.7 is acceptable for the first blank, and any number between 5.9 and 8.1 is appropriate for the second.

Resources

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Outcomes

KSCO: By the end of grade 3, students will be expected to

v) apply number-theory concepts (e.g., place-value pattern) in meaningful contexts, with respect to whole numbers and commonly used fractions and decimals

SCO: By the end of grade 3, students will be expected to

A8 order and compare decimals to tenths (Cont'd)

Suggestions for Teaching and Learning

A8 (Cont'd)

❑ Prepare a deck of cards with numbers such as 0.1, 0.2, ... 0.9, 1.0, 1.1 ... 1.9, 2.0, 2.1 ... 2.9 for a pair of students. Each student gets half the deck. They both turn over one card at a time. The student with the card showing the greater number keeps both cards. Play continues until someone has all the cards.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

Suggestions for Assessment

A8.5 Ask the student to create 4 different number sentences involving decimals in which the < sign is used. Ask him/her to rewrite each sentence so that the > sign can be used.

A8.6 Ask the student to draw two line segments, 4.3 cm and 4.7 cm, and to compare the two lengths.

Interview

A8.7 Tell the student that you are thinking of a number which is greater than 1.5. Ask him/her to ask relevant questions which would help to determine the number.

Portfolio

A8.8 Ask the student to describe or draw pictures of as many items as he/she can find which have a length between 0.8 m and 1.8 m.

Resources