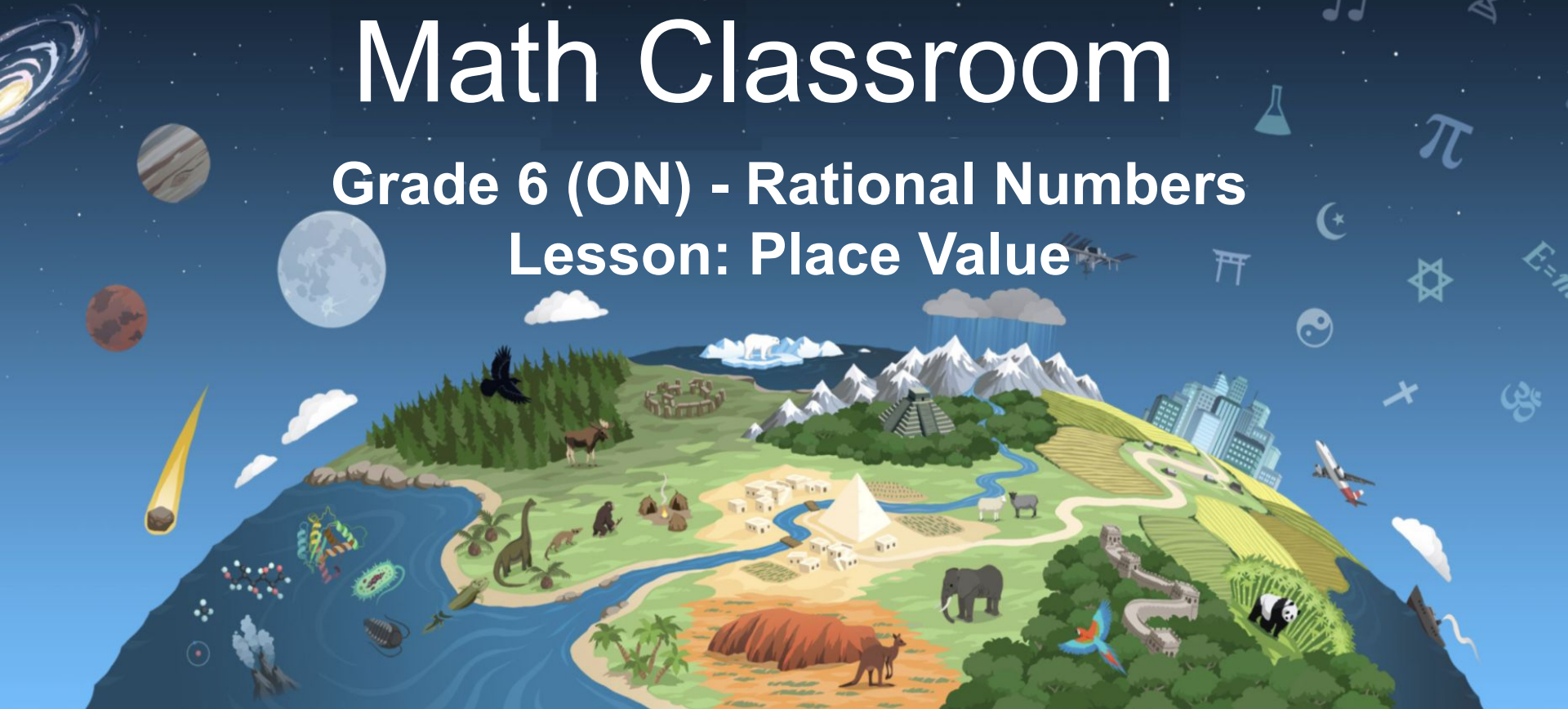


Binogi in Your Math Classroom

Grade 6 (ON) - Rational Numbers
Lesson: Place Value



Supported by



Resource Guide for Teachers

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Please visit:

<https://escapeprojects.ca/> for additional resources and information

Prepared by:

Dr. Emmanuelle Le Pichon
Dr. Dania Wattar
Rosalia Cha
Bita Correa
Jhonel Morvan
Mai Naji
Neha Kapileshwarker

Reviewed by:

Dr. Alexandre Cavalcante

Grade 6 - B1. Number Sense

: Example of Learning Objectives and Big Ideas

Overall Expectation

B1. demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life

Specific Expectation

B1.1 read and represent whole numbers up to and including one million, using appropriate tools and strategies, and describe various ways they are used in everyday life

Learning Objectives

To be able to identify the value of each digit in a number.

Big Ideas

The value of a digit helps when comparing numbers.

Assessment

1. Assessment FOR

: Diagnostic questions, Minds On, Action, Consolidation

2. Assessment AS: Consolidation

B1.1 Mathematical Terms and Resources/Materials

Vocabulary

place value, ones, units, tens, hundreds, thousands, millions, base ten, digit, base 10, number

Pair/Group Activities

Please follow your school's Covid-19 safety protocols for any pair/group activities.

Language Friendly Pedagogy

At the beginning of the lesson, students will be invited to add key terms in their Concept Detective and add any new words that they come across throughout the lesson.

Binogi Related Resources

Video: [The Positional System with Base 10](#)

Assessment: 3 quizzes available* (*refer to slide 13 for more notes*)

Other Resources

[Task Cards](#) (page 11)

At the beginning of class... (5 ~ 10 min)

1. Share learning objectives - *To be able to identify the value of each digit in a number.*
2. Co-create success criteria
 - Sample :
 - *I can explain base-10 system.*
 - *I can represent the value of a digit in a number.*
3. Ask the students to add the following words in their Concept Detective which they will fill out throughout the lesson: ***place value, number system, millions, base ten, digit, number, and any new terms***
4. Diagnostic Questions: Teachers should systematically start with 2 or 3 diagnostic questions by

a) using the previous year's specific expectation

- Compose the numbers 2000, 90 and 1.
- Decompose the number 190, 205.

b) OR by students do Binogi quizzes

Grade 5	Grade 6	Grade 7
B1.1 read, represent, compose, and decompose whole numbers up to and including 100 000, using appropriate tools and strategies, and describe various ways they are used in everyday life	B1.1 read and represent whole numbers up to and including one million, using appropriate tools and strategies, and describe various ways they are used in everyday life	B1.1 represent and compare whole numbers up to and including one billion, including in expanded form using powers of ten, and describe various ways they are used in everyday life

Minds On

Task Component	Instruction	Assessment Focus Look Fors	Notes
<p>Before (Activation/ Review) ~5-10 mins</p>	<p>1. Write a whole number on the board: ie. 85. Can you tell me about this number?</p> <ul style="list-style-type: none"> ● With ELLs, encourage them to write the number in English and in their first language individually, then if there are other peers who speak the same first language, check with them. ● Then compare how numbers are "lumped"/"based" in English and in their own language.. <ul style="list-style-type: none"> ○ ie: 85 in English: eighty-five, meaning eight 10s and five (base 10) <ul style="list-style-type: none"> ■ in French: <i>quatre-vingt-cinq</i>, meaning four 20s - five (base 20) ■ in Arabic: <i>khams wa thamanûn</i> (for feminine words), meaning 5 and eight 10s (base 10) ■ in Yoruba (Nigeria): <i>marundiladgrun</i>, meaning 5 from 90 ■ in Alambalak (Papua New Guinea): <i>yima hosfihosfi tir yohtt</i>, meaning 20 x (2 and 2) and 5 exact 	<p>How do students represent their understandings and linkages between concepts?</p> <p>How does the activity connect to, and help prepare students for problem solving?</p> <p>How are you interacting with your students?</p>	<p>Teacher records answer / wonderings / understandings. Asks students to elaborate/explain their responses with the class.</p>

Action

Task Component	Instruction	Assessment Focus Look Fors	Notes
<p>During (Working on it) ~15-20 mins</p>	<p>1. Watch Binogi video, The Positional System with Base 10 (<i>note: the video discusses up to ten thousands and decimal place values; ELLs can watch the video in the language they provide</i>). Discuss.</p> <p>2. Students work on the Task Cards (page 11) in pairs.</p>	<p>What role do I and my students play during the problem solving process?</p> <p>What strategies do we predict students will use to do the math?</p> <p>What strategies are students using to do the math?</p>	<p>Have your students watch the videos in the language of their choice.</p> <p>Record students' thoughts.</p> <p>Think-pair-share: student think on their own first, then share with their partner, then with the class.</p>

Consolidation

Task Component	Instruction	Assessment Focus Look Fors	Notes
After ~15 mins	<ol style="list-style-type: none"><li data-bbox="397 299 1128 419">1. Students create their own Task Card questions and answers. (The teacher can use these questions for a review session or for quizzes/tests later.)<li data-bbox="397 561 1051 714">2. Complete the <u>Concept Detective</u>; Ask students whether they can add new vocabulary.	<p data-bbox="1203 299 1464 521">How do students represent their understandings and linkages between concepts?</p> <p data-bbox="1203 598 1541 768">How does the activation activity connect to, and help prepare students for problem solving?</p> <p data-bbox="1203 834 1547 954">How are you interacting with your students during the activation?</p>	

Extension/Differentiation/Modification

	Instruction	Assessment Focus Look Fors:	Notes
<p>- Individual Practice: A question(s) for extension that students can do independently to assess understanding of the concept(s)</p> <p>- Differentiation (Modifications/ extensions)</p>	<p>- Questions on comparing numbers. ie) Is the value of digit '9' in 29,038 or digit '3' in 391,002 bigger?</p>	<p>How does the individual practice question relate to the problem, skills or strategies?</p> <p>Why is the individual practice question important for teachers and students?</p> <p>Are there any other strategies that can be used to differentiate instruction?</p>	

Parents and Community Connection

Homework Assignment

: [Concept Detective](#) - students can complete any terms they did not complete and add any mathematical terms they wish to include in their glossary with their parents

: Students watch the Binogi video they watched in class at home with their parents either in English or in one of the provided languages (there is an option for subtitles). Discuss.

: After the video, have students and family members brainstorm their own question and ways to answer the question

Task #1

100 ones = _____ tens

Task #2

30 hundreds = _____ ones

Task #3

400 tens = _____ thousands

Task #4

57 ten thousands = _____ hundreds

Task #5

What is the value of the digit 5?
59,102

Task #6

What is the value of the digit 2?
200,918

Task #7

What is the value of the digit 1?
492,001

Task #8

What is the value of the digit 1?
1,954,826

