1st Quarter Grade 7 Supplemental Lesson Plan
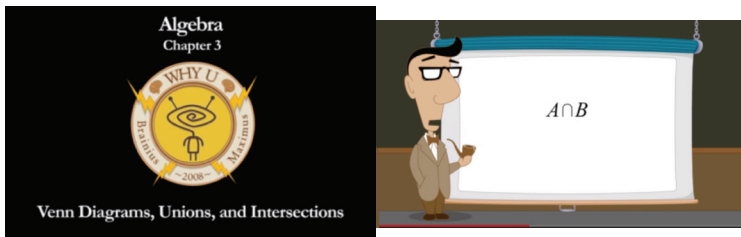
Set Operations

Introduction:

Assess the students' prior knowledge on set operations using the Knowledge Rating Chart below:

Knowledge Rating Chart Set Operations
Direction: Circle the number that represents your learning experience on set operations.
1. I've never heard of this before.
2. I've heard of this, but am not sure how it works.
3. I know about this and how to use it.

Body:

1. Let the students watch an animated video presentation on Venn diagrams, union, and intersection of sets. (Sample Video: https://www.youtube.com/watch?v=uR70knMr2Hg&list=PL20023FA07684B937)

Algebra Chapter 3 — WHY U — Brainus Maximus ~2008~ — Venn Diagrams, Unions, and Intersections

$A \cap B$

2. Using the information from the video, conduct a whole-class discussion on set operations using the following guide questions:

   a. What are the different set operations?

   b. In your own words, what does union of sets mean? Intersection of sets? Difference of sets?

   c. How do we determine the union, intersection, and difference of sets?

Knowledge

Union, Intersection, and Difference of Sets

Learning Competency

M7NS-Ia-2

- Illustrates the union and intersection of sets and the difference of two sets

KU

- Mathematical ideas can be used as a tool to communicate real-life situations and relationships.

KQ

- How does the study of sets promote understanding of real-life situations?

3. Give the students exercises on finding the union, intersection, and difference of sets.

4. For more practice, conduct a spin-off *Think-Pair-Share* activity (Lyman, 1981). Ask the students to answer questions on set operations, where they work on the problems individually and then form in pairs to discuss their thoughts and compare their answers. The pairs will share their answers to the whole class.

5. For enrichment, let the students choose one task from the following:

   a. Use concrete objects to explain set operations to a classmate.

   b. Compose a song that explains set operations.

   c. Draw an illustration that explains set operations.

Conclusion:

Use the Response Cards (Lujan, 2011) to facilitate the summary of the lesson and to assess the students' understanding of the lesson.

4 – Understands fully

3 – Demonstrates an understanding or application of the goal

2 – Minimal understanding

1 – No understanding

Differentiated Activities

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Subsets of Real Numbers

Introduction:

Elicit the students' prior knowledge by using YES/NO cards.

1. Have the students write YES on one side of a note card or piece of paper and NO on the other side.
2. Show to the class vocabulary words about the topic:
   - Real numbers
   - Natural numbers
   - Rational and Irrational numbers
   - Whole numbers
   - Integers
3. The students will show a YES card if they know the word and a NO card if they don't know the word.
4. Ask someone who is showing a YES card to define or describe the word.
5. Consolidate the students' responses.

Body:

1. Show to the class a blank chart of the real number system.

The Real Number System
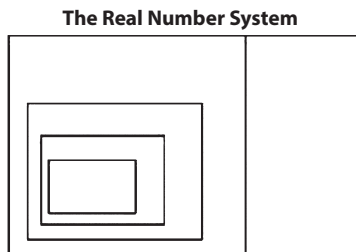
2. Conduct a review of the sets of numbers that they have learned from their elementary lessons.
   a. On what subset of real numbers can we include the fractions? Whole numbers? The number zero?
   b. How about the number pi?
3. Conduct a whole-class discussion on the subsets of real numbers and illustrate them in the chart.
4. Ask the students to give examples of numbers under a given subset of a real number.

Knowledge

Subsets of Real Numbers

Learning Competency

M7NS-Ih-1

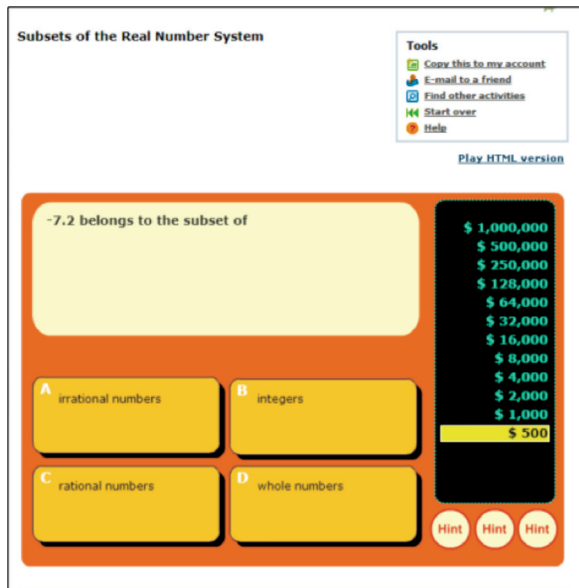- Illustrates the different subsets of real numbers

KU

- Mathematical ideas can be used as a tool to communicate real-life situations and relationships.

KQ

- How does the study of sets promote understanding of real-life situations?

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5. Conduct a spin-off I Have the Question, Who Has the Answer activity (Rutherford, 2008) on subsets of real numbers.

  • Distribute answer cards to the students.

  • Place a question card on the desk of each student.

  • Designate a student to turn over a question card and say, "The question is...Who has the answer?"

  • Have all the students check their answer cards to see if they have the correct answer, and the process continues.

6. Let the pupils do an interactive web game on subsets of real numbers (Sample site: http://www.quia.com/rr/104833.html)

Conclusion:

For the summary of the lesson, ask them to complete the statements:

"I've realized that _____."

"I've learned that _____."

"I've discovered that _____."

"I need help on _____."