

Lesson Title: Lesson 1, Exploring Multiples

Course: 6th Grade

Designer: Annissa Foster

Learning Outcomes/Intentions

Formal Unit Outcome(s): N6.2 Demonstrate understanding of factors and multiples (concretely, pictorially, and symbolically) including:

- determining factors and multiples of numbers less than 100
- relating factors and multiples to multiplication and division

Indicator(s): b. Represent a set of whole-numbered multiples for a given quantity concretely, pictorially, or symbolically and explain the strategy used to create the representation.

c. Explain how skip counting and multiples are related

Objective: Students will be able to find multiples for numbers under ten. They will also be able to identify the least common multiple of a set of numbers, and gain an understanding of skip counting.

Mathematical Processes: C, CN, R

Essential Questions: Can you find multiples of a number under ten?

Can you find the least common multiple (LCM) of two numbers?

Can you skip count starting at a number under ten?

First Nations Content

Assessment Evidence

Formative Assessments (Assessment for Learning): Questioning - See below
Students will also be given feedback throughout the lesson as the teacher walks around the classroom to evaluate how students are doing.

Summative Assessments (Assessment of Learning): Exit Slip (Attached).

Materials

-Hundreds Chart, enough for every student with space at the bottom for students to record

-Highlighter
-Pencil
-Exit Slip

Learning Plan

Learning Experiences & Instruction:

Explore:

Multiples of Two Numbers Under Ten

Distribute a Hundreds Chart to each student. The hundreds chart will have space below for students to write. Instruct the students to begin at number 6 on the hundreds chart and circle every 6th number. Tell them they do not need to go past 40 right now. Discuss with students how all the numbers they circled are multiples of six. Demonstrate how multiples are tied to multiplication by showing that $1 \times 6 = 6$, $2 \times 6 = 12$, $3 \times 6 = 18$ etc...

Next, have students highlight all multiples of four, again they do not need to surpass 40 right now. (Some students may already have the concept of skip counting, they may finish quickly and could do all the way to 100 if they wish.)

Ask:

Do you notice any patterns developing from the multiples of 6 and 4? What do these numbers have in common? (Students will hopefully be able to identify where the multiples overlap)

Students discuss and share with the class. Students should be able to identify the instances where multiples of 6 and 4 overlap. Inform students that these are called 'Common Multiples', and that the very first common multiple is called the 'Least Common Multiple'

Ask:

How could we organize our findings without the hundreds chart? Could we write these down without the hundreds chart?

Let students turn to a partner to discuss possible ways to do this. After a few minutes bring students back and discuss and share with the class.

Explore:

Skip Counting

If students have not been able to identify a way to write down their findings without the hundreds chart, show students that one way to organize the multiples of a number could look like this...

6: 6, 12, 18, 24...

4: 4, 8, 12, 16, 20, 24...

Ask:

Are there any shortcuts we could do that don't include the hundreds chart?

Explain that we do not need the hundreds chart to continue finding the rest of the multiples. They could instead add the original number each time. For the number six, students would simply add six each time. This is known as skip counting. Demonstrate by continuing the multiples above and adding six each time.

Next, have students get into pairs or groups of three and give them the following questions and allow students to work together to solve them. Some may still wish to use the hundreds chart.

Can you find the first five multiples of three?

Can you find the first five multiples of five?

What is the least common multiple of three and five?

As students work and exploring, the teacher is walking around and offering feedback. If students are finished quickly, ask them to pick their own two numbers under ten and try and find the least common multiple. Before the end of class, bring students together as a whole group and have them discuss their findings.

Extend:

As an extension, students could find the LCM of three numbers, for example 3, 5, and 10.

Evaluation:

Exit slip (attached)

Have students find five multiples of three and four, and the LCM.

Reflection

100's Chart taken from: <http://allfreeprintable.com/100-chart>