Topic: Fraction Problem with Number Line Grade Level(s): 4

Learning Outcomes: A8

Context of Lesson within the unit: Solving problems with number lines / fraction of a set

Materials: fraction number lines, problem story, fraction trains

Lesson Ideas:

1. Share Learning Intention: I can solve a fraction story problem with a number line.

2. Warm-up or review of concepts: Create a few number lines, using the benchmarked line as a basis. **Review the concepts that fractions must be compared to the whole, the numerator states the number of parts and denominator shows the total number of parts. Connect / Infer during the lesson that this problem involves a model of fractions as a part of a set (different than a model of a part of 1).**

3. Activity with many levels of entry introduced and practiced: Read and discuss the story problem.

4. Establish Criteria for success: I can solve this problem by showing it on a number line.

5. Activity continued: Decide what information is important to solve the problem. Use the number lines and fraction trains to solve the problem. (It is important to compare the number line so that 1 represents the 1 set of 12 people. Various methods of getting to this answer should also be discussed and shared.)

6. Reflection: Self assessment based on criteria and learning intention.
   *Share with a partner what helped us solve this problem.

7. Ticket out the door: Question that links to the learning intention
   *State how number lines help us solve problems as you head out the door.

8. For differentiation, a more difficult problem has also been included where students could use number lines, or other means of calculation to determine their answer. To make the question easier, ask students to determine the number of students who swim OR the number of students who play golf OR the number of students who play indoors?

Lesson Review:

- Did I connect the concept to previous experiences?
- Did I provide individual choice?
- Was there an open-ended task?
- Was it possible to enter the task from a variety of levels?
- Was time provided for 'Turn and Talk' for sharing of strategies and perspectives?

Prescribed Learning Outcomes	Suggested Achievement Indicators
A8 demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to – name and record fractions for the parts of a whole or a set – compare and order fractions – model and explain that for different wholes, two identical fractions may not represent the same quantity – provide examples of where fractions are used [C, CN, PS, R, V]	❑ represent a given fraction using concrete materials ❑ identify a fraction from its given concrete representation ❑ name and record the shaded and non-shaded parts of a given set ❑ name and record the shaded and non-shaded parts of a given whole ❑ represent a given fraction pictorially by shading parts of a given set ❑ represent a given fraction pictorially by shading parts of a given whole ❑ explain how denominators can be used to compare two given unit fractions with numerator 1 ❑ order a given set of fractions that have the same numerator and explain the ordering ❑ order a given set of fractions that have the same denominator and explain the ordering ❑ identify which of the benchmarks 0, $\frac{1}{2}$, or 1 is closer to a given fraction ❑ name fractions between two given benchmarks on a number line ❑ order a given set of fractions by placing them on a number line with given benchmarks ❑ provide examples of when two identical fractions may not represent the same quantity (e.g., half of a large apple is not equivalent to half of a small apple; half of ten cloudberries is not equivalent to half of sixteen cloudberries) ❑ provide an example of a fraction that represents part of a set and a fraction that represents part of a whole from everyday contexts