Preliminary Planning Sheet
Grade 5 – Time for Exercise

Domain(s)

Number and Operations—
Fractions

Standard(s)

5.NF.B.6

Mathematical Practices

MP.1   MP.3   MP.4   MP.5   MP.6

Major Underlying Mathematical Concepts

- Solve real-world tasks involving fractions
- Compare fractions with unlike denominators
- Multiplication of fractions
- Fraction notation represents division

Problem Solving Strategies

- Model (manipulatives)
- Area model
- Diagram/Key
- Table
- Number line

Formal Mathematical Language and Symbolic Notation

- Model
- Diagram/Key
- Area model
- Table
- Chart
- Number line
- Amount
- Per
- Fractions (1/2, 1/8 …)
- Numerator/Denominator
- Data
- Outcomes
- Ratio
- Greater than (>)/Less than (<)
- Addition
- Multiplication
- Most/Least
- More likely
- Total/Sum/Product
- Equivalent/Equal to (=)
- Decimals (0.25, 0.5 …)
- Dozen
- Percent, 50%

Possible Solution(s)

There are 96 fifth graders outside for exercise time. 48 students are playing soccer, 24 playing basketball, 12 are jogging, and 12 are playing football.

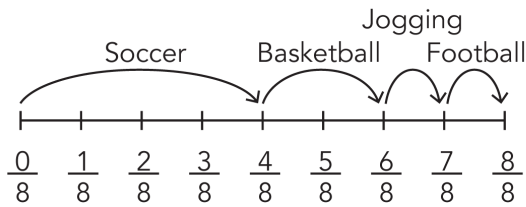| Key |
| --- |
| **S** is Soccer |
| **B** is Basketball |
| **J** is Jogging |
| **F** is Football |
| **T** is Total Students |

$\dfrac{1}{2} \cdot \dfrac{96}{1} = \dfrac{96}{2} = 48$

$\dfrac{1}{4} \cdot \dfrac{96}{1} = \dfrac{96}{4} = 24$

$\dfrac{1}{8} \cdot \dfrac{96}{1} = \dfrac{96}{8} = 12$

Diagram cells: $\frac{1}{2}$ | S 48; $\frac{1}{4}$ J 12; $\frac{1}{8}$; B 24; $\frac{1}{8}$ F 12

S + B + J + 12 = T

48 + 24 + 12 + 12 = 96

Soccer   Basketball   Jogging   Football

$\dfrac{0}{8}$ $\dfrac{1}{8}$ $\dfrac{2}{8}$ $\dfrac{3}{8}$ $\dfrac{4}{8}$ $\dfrac{5}{8}$ $\dfrac{6}{8}$ $\dfrac{7}{8}$ $\dfrac{8}{8}$

Fractions of Students per Activity

Activity	Fraction of Students	Students	Total Students
Soccer	½	48	48
Basketball	¼	24	72
Jogging	⅛	12	84
Football	⅛	12	96

Possible Connections

Below are some examples of mathematical connections. Your students may discover some that are not on this list.

- Soccer is the activity selected by most of the students.
- 24, or 25%, of the fifth graders selected basketball.
- A new fifth grader would most likely select soccer.
- A dozen students selected jogging and football.
- 50% or 0.5 of the students are playing soccer.
- 48 out of 96 students select soccer, $\dfrac{48}{96}$. This is an outcome, also a ratio.
- Relate to a similar task and state a math link.
- Solve more than one way to verify the answer.
- There are even numbers of students doing each exercise activity.
- Use the division of fractions, $\dfrac{96}{1} \div \dfrac{1}{2} = \dfrac{96}{2} = 48$.