**N5: Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially and symbolically (limited to positive sums and differences).**

[C, CN, ME, PS, R, V]

**Achievement Indicator:**

**Use benchmarks to estimate the sum or difference of positive fractions or mixed numbers.**

1) Estimate the sum for the following questions. Explain your thinking.

1.  b)  c)  d) 

2) Estimate the difference for the following questions. Explain your thinking.

a)  b)  c)  d) 

**Achievement Indicator:**

**Model addition and subtraction of given positive fractions or mixed numbers, using concrete representations, and record symbolically.**

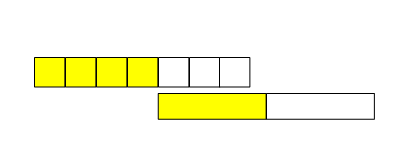
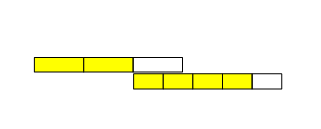
1) Using pattern blocks, model and find the following sums. Draw the pattern blocks you used.

1.  b)  c)  d) 

2) Using pattern blocks, model, and find the following differences. Draw the pattern blocks you used.

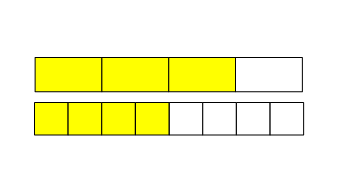
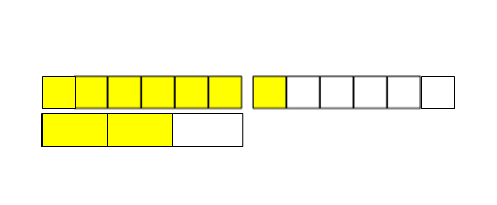
1.  b)  c)  d) 

3) Estimate and then find the sum represented by the fraction strips below. Write an addition equation for each.



a) b)

4) Estimate and then find the difference represented by the fraction strips below. Write a subtraction equation for each.



a) b)

**Achievement Indicator:**

**Determine the sum of two given positive fractions or mixed numbers with like denominators.**

1) Calculate the sums of the following fractions. Explain your strategy.

1.  b) 

2) Calculate the sums of the following mixed numbers. Explain your strategy.

a)  b) 

**Achievement Indicator:**

**Determine the difference of two given positive fractions or mixed numbers with like denominators.**

1) Calculate the differences for the following fractions. Explain your strategy.

1.  b) 

2) Calculate the difference for the following mixed numbers. Explain your strategy.

1.  b) 

**Achievement Indicator:**

**Determine a common denominator for a given set of positive fractions or mixed numbers.**

1) Determine a common denominator for each set of fractions or mixed numbers. Explain your strategy.

a)  b) 

2) Determine a common denominator for each set of fractions or mixed numbers. Explain your strategy.

1.  b) 

**Achievement Indicator:**

**Determine the sum of two given positive fractions or mixed numbers with unlike denominators.**

1) Marian has  of a bag of bagels. She finds anotherof a bag in the cupboard and puts these bagels in the first bag. What fraction of the first bag is now full of bagels? Explain the strategy you used to solve this problem.

2) Gina had a party and ordered several pizzas. After the party, she had  meat pizzas and of a works pizza left over. How much pizza did she have left over? Explain the strategy you used to solve this problem.

**Achievement Indicator:**

**Determine the difference of two given positive fractions or mixed numbers with unlike denominators.**

1) Jeff had  of his chocolate bar left. He gave Josh of the bar. How much did he have left? Explain the strategy you used to solve this problem.

2) Kyle has hours to complete a technology project. He thinks that he will need  hours to design and build. How much time will he then have to write the report for his project? Explain the strategy you used to solve this problem.

**Achievement Indicator:**

**Simplify a given positive fraction or mixed number by identifying a common factor (GCF) between the numerator and the denominator.**

1) Identify the common factor needed to simplify the following fractions. Re-write the fraction in simplest terms.

1. = \_\_\_\_ b) = \_\_\_\_

2) Identify the common factor needed to simplify the following mixed numbers. Re-write the mixed number in simplest terms.

a) = \_\_\_\_ b)  = \_\_\_\_

**Achievement Indicator:**

**Simplify the solution to a given problem involving the sum or difference of two positive fractions or mixed numbers.**

1) Sarah’s iPod is half full. She downloads more music and fills another tenth of the space. What is the total space now used on her iPod? Show your work and express your answer in simplest terms.

2) Seven twelfths of the flowers in Jane’s garden have bloomed. One third of these flowers are geraniums. What fraction of the flowers that have bloomed are other flowers? Express your answer in simplest terms.

3) This week Anita practiced the piano for  hours and played soccer for hours. How many hours did Anita spend practicing piano and playing soccer? Express your answer in simplest terms.

4) Jason had  pizzas left over after his birthday party. He shared of the left-over pizzas with his brothers. How much pizza is now left? Express your answer in simplest terms.

**Achievement Indicator:**

**Solve a given problem involving the addition or subtraction of positive fractions or mixed numbers and determine if the solution is reasonable.**

1) Jody added and  and got an answer of . Is his answer correct? How do you know?

2) Elaina completed the following question:



How can you verify that her answer makes sense?

3) Martha completed the following addition question. Is her answer reasonable? Explain your thinking.



4) Jamie completed the following subtraction question. Is his answer reasonable? Explain your thinking.

