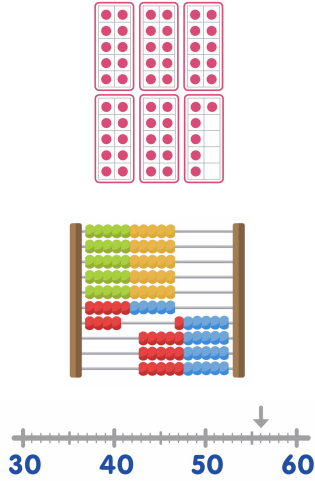
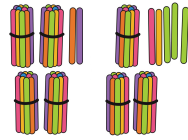
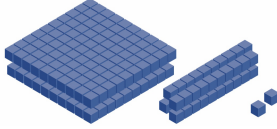
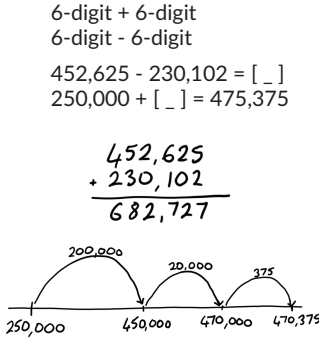
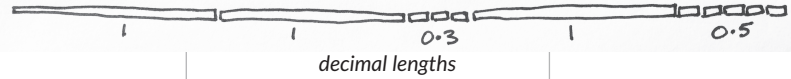
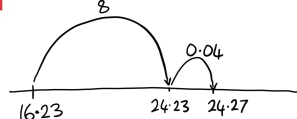
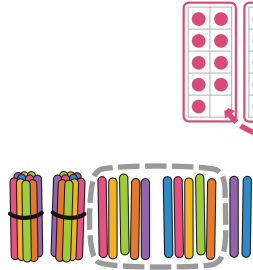
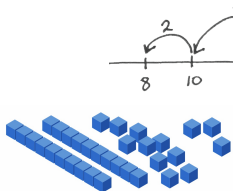
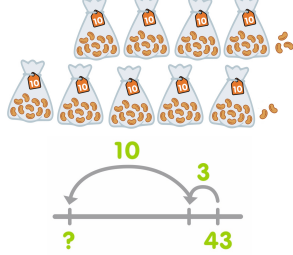
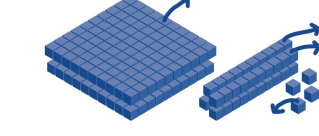
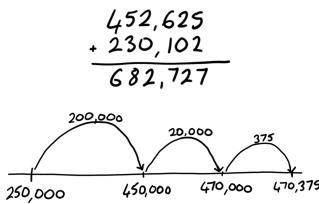
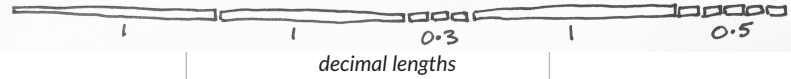
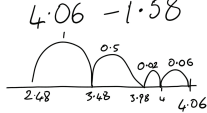
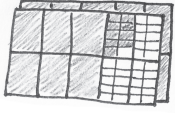
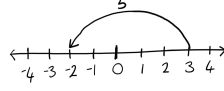


Number Milestones: Solving problems involving addition and subtraction

NZC Early Level 1 Year 1: 5 -6 year olds Numeracy Stage 1/2/3	NZC Level 1 Year 2: 6 -7 year olds Numeracy Stage 4	NZC Early Level 2 Year 3: 7 -8 year olds Numeracy Early Stage 5	NZC Level 2 Year 4: 8 -9 year olds Numeracy Stage 5	NZC Early Level 3 Year 5: 9 -10 year olds Numeracy Early Stage 6	NZC Level 3 Year 6: 10 -11 year olds Numeracy Stage 6	NZC Early Level 4 Year 7: 11 -12 year olds Numeracy Early Stage 7	NZC Level 4 Year 8: 12 -13 year olds Numeracy Stage 7	NZC Level 5 Year 9/10: 14+ year olds Numeracy Stage 8
Counting Solve problems involving joining, separating and counting Counting from one numbers up to 10, then up to 20  Counting 1. Order of numbers always the same 2. One to one matching 3. The number you end on is how many 4. Order counted does not matter 5. Counting is the same for everything, small, large, real, imaginary ... 	Counting on and counting back numbers up to and from 100 Skip counting in tens up to 100 in fives up to 50 in twos up to 20 				Any whole numbers $145 \text{ billion} + 389 \text{ million} = [_]$ $8,250,153,250 - [_] = 120 \text{ million}$ Adding and subtracting decimals (no renaming) Solve problems using part-whole thinking, place value understanding, number facts ... Whole numbers and tenths $2.3 + 1.5 = [_]$ $16.9 - [_] = 12.5$ Numbers with tenths, hundredths $16.23 + 8.04 = [_]$ 	Each level is a one-year wide band of learning aligned to The New Zealand Curriculum. They describe what students are able to do correctly, and independently, to be 'working at' that level, even if it is at the beginning of the level and not all aspects have been mastered.  		
10 ones $\longleftrightarrow$ 1 ten 12 ones $\longleftrightarrow$ 1 ten & 2 ones 	Adding and subtracting over decades, centuries, millennia ... (whole numbers, renaming) Solve problems using part-whole thinking, place value understanding, additive thinking, number facts ... Use a non counting method 1-digit + 1-digit 2-digit - 1-digit answers over a decade $9 + 7 = [_]$ $16 - [_] = 8$ $33 - [_] = 29$ 	Adding and subtracting not over decades, centuries, millennia ... (whole numbers, no renaming) Solve problems using part-whole thinking, place value understanding, additive thinking, number facts ... Use a non counting method 2-digit + 2-digit 2-digit - 2-digit $43 + 52 = [_]$ $43 - 13 = [_]$ $[_] + 35 = 77$ 	3-digit + 3-digit 3-digit - 3-digit $242 + 406 = [_]$ $2,346 - [_] = 1,021$ 	6-digit + 6-digit 6-digit - 6-digit $452,625 - 230,102 = [_]$ $250,000 + [_] = 475,375$ 	Any whole numbers $145 \text{ billion} + 389 \text{ million} = [_]$ $8,250,153,250 - [_] = 120 \text{ million}$ Adding and subtracting decimals (no renaming) Solve problems using part-whole thinking, place value understanding, number facts ... Whole numbers and tenths $2.3 + 1.5 = [_]$ $16.9 - [_] = 12.5$ Numbers with tenths, hundredths $16.23 + 8.04 = [_]$ 	Any whole numbers $[_] + 9 \text{ million} = 20 \text{ billion}$ use efficient strategies # Adding and subtracting decimals (with renaming) Solve problems using part-whole thinking, place value and decimal understanding, number facts ... Whole numbers and tenths $16.9 + 3.3 = [_]$ $140.1 - [_] = 12.5$ 	 Any decimal $1.9805 + [_] = 224.23$ use efficient strategies # Adding and subtracting integers Solve problems using part-whole thinking, integer understanding ... Subtraction when the answer is a negative number $3 - 5 = [_]$ $150 - [_] = -5$ 	Any integer
Understandings, knowledge and skills underpinning mathematical thinking and problem solving Read, write, count, order, estimate, rounding Numbers up to 10, then up to 20 Representations/models/place value 'five and ...' 'ten and ...' Renaming $10 \text{ 'ones'} = 1 \text{ 'ten'}$ Basic Facts Addition facts up to $5 + 5$ and corresponding subtraction facts	Numbers up to 100 'tens' and 'ones' $12 \text{ 'ones'} = 1 \text{ 'ten' and } 2 \text{ 'ones'}$ $3 \text{ 'ten' and } 5 \text{ 'ones'} = 35 \text{ 'ones'}$ Addition facts with answers to 10 and corresponding subtraction facts	Numbers up to 1,000 'hundreds', 'tens' and 'ones' $5 \text{ 'tens' and } 3 \text{ 'ones'} = 4 \text{ 'tens' and } 13 \text{ 'ones'}$ $7 \text{ 'tens' and } 14 \text{ 'ones'} = 8 \text{ 'tens' and } 4 \text{ 'ones'}$ Addition facts up to $10 + 10$ and corresponding subtraction facts	Numbers up to 10,000 'thousands', 'hundreds', 'tens', 'ones' $6 \text{ 'hundred' and } 2 \text{ 'tens' and } 3 \text{ 'ones'} = 6 \text{ 'hundred' and } 1 \text{ 'tens' and } 13 \text{ 'ones'}$ Addition facts with answers to 20 and corresponding subtraction facts	Numbers up to 1,000,000 'ones', 'tens', 'hundreds' of thousands $6 \text{ 'hundred' and } 2 \text{ 'tens' and } 3 \text{ 'ones'} = 6 \text{ 'hundred' and } 1 \text{ 'tens' and } 13 \text{ 'ones'}$ $5 \text{ 'hundred' and } 11 \text{ 'tens' and } 13 \text{ 'ones'}$ Add and subtract three numbers up to 10, and with facts on both sides of the equals sign	Numbers greater than 1,000,000 Numbers with 'tenths' $10 \text{ 'tenths'} = 1 \text{ 'ones'}$ $1 \text{ 'ones' and } 7 \text{ 'tenths'} = 17 \text{ 'tenths'}$ Add and subtract more than three numbers up to 10	Any whole numbers Numbers with 'tenths', 'hundredths' $100 \text{ 'hundredths'} = 10 \text{ 'tenths'} = 1 \text{ 'ones'}$ $307 \text{ 'hundredths'} = 3 \text{ 'ones' and } 7 \text{ 'hundredths'}$ Add, subtract and multiply numbers up to 10	Any decimal number $6 \text{ 'hundred thousand' and } 5 \text{ 'tens' and } 216 \text{ 'tenths'} = 600,071.6$ Add, subtract, multiply, divide numbers up to 10	Any integer Add, subtract, multiply, divide

Efficient strategy in relation to the type of problem and numbers involved.
 Key strategies are: Breaking into parts, working on the parts then back together, e.g. place value and using what is already known to work out something new, e.g. round and adjust..