HANGAIA TE URUPOUNAMU MŌ TĀTOU

HAUTANGA

Taumata 2 (Tau 3)

Teacher Booklet

ODD YEARS

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Rapanga 1	Whakamahia te rauemi hautanga kia hanga te kōtahi ki ngā taputapu hautanga rerekē. Tuhia me te tā to whakaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā wāhanga ki te kōtahi. Whakamahia te rauemi hautanga kia hanga tata ki te kōtahi ki ngā taputapu hautanga rerekē. Tuhia me te tā to whakaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā wāhanga e tata ana ki te kōtahi. Whakamahia te rauemi hautanga kia hanga nui ake i te kōtahi ki ngā taputapu hautanga rerekē. Tuhia me te tā to whakaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā wāhanga nui ake i te kōtahi.
Whakaaro Matua Pāngarau ***Big Ideas***	Numbers can be described in many different ways including as fractions. The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.
Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols.
Whāinga Ako ***Learning***	• Combine and recombine different units of fractions to make one whole. • Identify and recognise equivalent fractions.

Outcomes	
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, sixths, fraction, fractional number, whole number, eighths, equal, equivalent.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who made combinations of the whole or other fractions using the same size pieces (halves, quarters, sixths, eighths) and recorded the combinations as numbers, equations, or words. Then, select students to share who made combinations of the whole using the unlike fraction pieces (e.g., $\frac{1}{2} + \frac{1}{4} + \frac{1}{4} = 1$) and recorded the combinations as numbers, equations or words. If no students did this, then introduce as an alternative solution that students previously shared. **Connect:** What is $\frac{2}{2}$ the same as? What is $\frac{6}{6}$ the same as? What is $\frac{4}{4}$ the same as? What is $\frac{8}{8}$ the same as? What patterns and relationships do you notice? What other fractional numbers are the same as one whole? [Encourage students to record using equals sign $\frac{2}{2} = \frac{5}{5} = \frac{100}{100}$] What is a rule for fractions that equal one whole? [Record conjectures and symbolise as $\frac{n}{n}$].
Kōrero Tautoko ***Teacher Notes***	• Have fraction pieces for the whole, quarters, halves and introduce sixths and eighths at the second task. • Monitor for students using the words fractional numbers (not pieces or bits). • Notice students who make generalisations (e.g., the smaller the denominator the bigger the fraction when the numerator is one). Record these as class conjectures and have students explore and prove at a later date as a warm-up activity. • Expect students to represent materials and use appropriate notation and the equal sign ($\frac{2}{2} = 1$). • For the independent task, you will need fraction tile sets.

Ngohe whakaharatau ***Independent Tasks***	Whakamahia te rauemi hautau kia hanga ētahi huinga hautau ki te kōtahi. Tā me te tuhi kia toru ngā momo tauira. Whakamahia te rauemi hautau kia hanga ētahi huinga hautau e tata ana ki te kōtahi. Tā me te tuhi kia toru ngā momo tauira. Whakamahia te rauemi hautau kia hanga ētahi huinga hautau nui ake i te kōtahi. Tā me te tuhi kia toru ngā momo tauira.
Ngā matapae ***Anticipations***	

Rapanga 2	Whakamahia te rauemi hautanga kia hanga te kōtahi iti iho ki ngā taputapu hautanga rerekē. Tuhia me te tā tō whakaaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā wāhanga ki te kōtahi iti iho. Whakamahia te rauemi hautanga kia hanga he mea e orite ana ki te haurua ki ngā taputapu hautanga rerekē. Tuhia me te tā to whakaaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā wāhanga ki te kōtahi nui ake. Whakamahia te rauemi hautanga kia hanga ngā hautanga nui ake ite haurua ki ngā taputapu hautanga rerekē. Tuhia me te tā tō whakaaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā hautanga nui ake i te haurua. Whakamahia te rauemi hautanga kia hanga he mea nui ake i te haurua engari he iti iho i te kōtahi mā ngā taputapu hautanga rerekē. Tuhia me te tā to whakaaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā hautau nui ake ite haurua engari he iti iho i te kōtahi. Whakamahia te rauemi hautanga kia hanga nui ake ite kōtahi engari he iti iho i te rua mā ngā taputapu hautanga rerekē. Tuhia me te tā tō whakaaturanga. Me whakamārama me te taunakihia ngā take ka hanga ngā wāhanga ki te kōtahi iti iho.
Whakaaro Matua Pāngarau ***Big Ideas***	Numbers can be described in many different ways including as fractions. The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols.
Whāinga Ako ***Learning Outcomes***	• Combine and recombine different units of fractions to make one whole.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, thirds, sixths, fraction, fractional number, whole number, eighths, equal, equivalent, numerator, denominator.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who made combinations of fractions using the same size pieces (halves, thirds, quarters, sixths, eighths) and recorded the combinations as numbers, equations, or words. Then, select students to share who made combinations using the unlike fraction pieces (e.g., $\frac{1}{2}$ and $\frac{1}{3}$ is more than $\frac{1}{2}$ but less than one whole) and recorded the combinations as numbers, equations or words. If no students did this, then introduce as an alternative solution that students previously shared. **Connect:** Use your fraction tiles to find and record fractions that are the same as one half. What other fractions do you know that are the same as one half? What patterns and relationships do you notice? What is a rule for fractions that are equivalent to one half? [e.g., the numerator has to be half of the denominator]
Kōrero Tautoko ***Teacher Notes***	• Have fraction pieces for the whole, quarters, halves, sixths, eighths and thirds. • Facilitate the students to notice that the numerator names the numbers of pieces of the whole and the denominator names the number of pieces the whole has been divided into. • Monitor for students using the words fractional numbers (not pieces or bits) and justifying their statements using both fraction pieces and notation. • For the independent activity, have fraction tiles for whole, halves, quarters, and thirds available.

Ngohe whakaharatau ***Independent Tasks***	Tohua ngā rerenga tau e tika ana, e hē ana rānei. $20 + 20 + 70 = 40 + 70$ $\frac{1}{2}+\frac{1}{2}+\frac{1}{4}+\frac{1}{4}=\frac{2}{2}+\frac{2}{4}$ $18 + 6 = 17 + 7$ $1=\frac{1}{4}+\frac{1}{4}+\frac{1}{4}$ $2+2=\frac{4}{4}+\frac{2}{2}+\frac{3}{3}$ $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=\frac{1}{3}+\frac{1}{2}$ Whakamāramahia me te taunakihia he aha i pēnā ai ou whakaaro.
Ngā matapae ***Anticipations***	

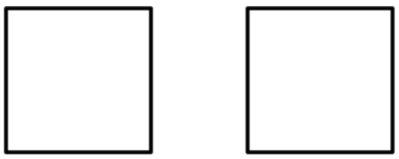
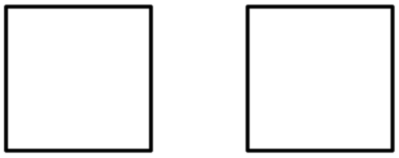
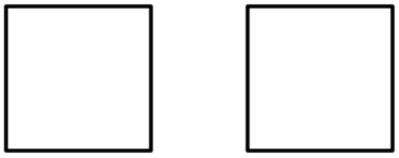
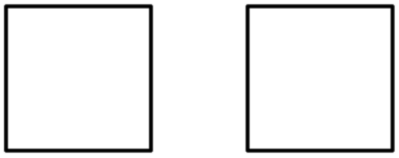
Rapanga 3	He aha kei waenganui i te 0 me te 1? Tohua ngā tau i te papa mā te tēpa whakapiri. Me whakamārama, ā, me taunakihia. Tāngia i tau rarangi tau me te tohu ngā nama. Whakaatuhia e whā ngā nama i waenga i te 1-2. Tohua ēnei nama.
Whakaaro Matua Pāngarau ***Big Ideas***	Numbers can be described in many different ways including as fractions. The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3} = 2 \div 3$. On the number line, 2 ÷ 3 can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit (2 x $\frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3}$ x 2); each is associated with the same point on the number line. Each fraction can be associated with a unique point on a number-line. There are an infinite number of fractions between any two fractions on the number line.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols.
Whāinga Ako ***Learning Outcomes***	• Show fractions on a number-line.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, thirds, sixths, eighths, counting numbers, mixed numbers.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who are able to show in multiple ways equal parts which represent a range of different fractional numbers on the large number-line and then students who can visualise and draw number-lines and mark the positions of fractions between 0 and 1 and 1 and 2. **Connect:** What mathematical statements using mixed numbers can you make using the number-line for numbers between 3 and 4? Use the equals sign (=) or greater than or less than (> and <) signs. I will give you an example to start: $3\frac{1}{2}$ is less than $3\frac{3}{4}$ [record as $3\frac{1}{2} < 3\frac{3}{4}$].
Kōrero Tautoko ***Teacher Notes***	• During the launch ask the students whether there are numbers between whole numbers? Lead into a discussion of situations where they have met a half (e.g., a baby before they are one, halfway between their own birthdays, half hour on a clock, half an apple). Extend discussion to other situations using other fractions. • Have an unmarked number line on the whiteboard to use during the lesson. Use this during the launch to estimate where the fraction is that they describe. • Have an unmarked length of paper tape across the floor and large marked fraction cards with whole number words and fraction words and symbols. • Facilitate the students to notice that earlier in the year, the number lines they have used only contained whole numbers (numbers that resulted from counting). The fractions they are talking about now (numbers resulting from equal splitting or partitioning) can be represented on the number line. This shows that fractions may also be thought of as numbers. In the connection, refer to the fractions (e.g., 3 ½) as mixed numbers. • Monitor for students using vocabulary which emphasises dividing or splitting equally or portioning into equal parts. • Notice students who find the concept of fractions as numbers between numbers counter intuitive. Allow them to struggle and construct reasoning through mathematical talk and using agreeing mathematically and

	disagreeing mathematically (e.g., I agree because…) • For the independent task, have on A3 a series of number lines marked with whole numbers from 0 to 10.
Ngohe whakaharatau ***Independent Tasks***	Tohua i te rārangi tau kei hea ēnei tau hanumi. $\frac{1}{2}$ $\frac{1}{4}$ $9\frac{1}{8}$ $5\frac{2}{4}$ $4\frac{1}{2}$ $4\frac{3}{4}$ $7\frac{2}{4}$ $8\frac{1}{2}$ $\frac{6}{8}$ $3\frac{4}{8}$ $9\frac{1}{2}$ $2\frac{1}{4}$ Tohua ētahi atu nama i te rārangi tau.
Ngā matapae ***Anticipations***	

Rapanga 4	Kei te hoko tētahi toa kēkē i ngā kēkē panana. He orite ngā kēkē katoa. Tokotoru ngā tamariki i te whānau o Jamie e toha ana i tētahi kēkē. Tokoono ngā tamariki i te whānau o Tarani e toha ana i tētahi kēkē. Tokowaru ngā tamariki i te whānau o Mere e toha ana i tētahi kēkē. Tokorua ngā tamariki i te whānau o Hoani e toha ana i tētahi kēkē. Tokowhā ngā tamariki i te whānau o Timo e toha ana i tētahi kēkē. Kei a wai te maha o te kēkē? Taunakihia me te whakamārama ou whakautu mā ngā tauira e toru.
Whakaaro Matua Pāngarau ***Big Ideas***	Numbers can be described in many different ways including as fractions. The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3} = 2 \div 3$. On the number line, 2 ÷ 3 can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit (2 x $\frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3}$ x 2); each is associated with the same point on the number line. Each fraction can be associated with a unique point on a number-line. There are an infinite number of fractions between any two fractions on the number line.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1**: Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols.
Whāinga Ako ***Learning Outcomes***	• Divide wholes into equal parts. • Divide a whole number into fractions. • Compare and order unit fractions.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, thirds, sixths, equal, equivalent, fair share, denominator, numerator.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who have developed multiple representations including numbers, number-line, and drawings and use these to show comparisons between the different fractions. **Connect:** Record the solutions for the task: $1 \div 3 = \frac{1}{3}$ $1 \div 8 = \frac{1}{8}$ $1 \div 2 = \frac{1}{2}$ $1 \div 4 = \frac{1}{4}$ What patterns and relationships do you notice? What do you think would be the solution for? $1 \div 6 =$ $1 \div 20 =$ $1 \div A =$
Kōrero Tautoko ***Teacher Notes***	• During the launch, model the cake as a rectangular representation to ensure that the students use this as the representation. • Facilitate the students to notice that the denominator represents the number of pieces the whole has been divided into and the numerator shows the number of pieces that you have of the total. • Expect students to represent using number lines and identical rectangular representations

Ngohe whakaharatau ***Independent Tasks***	E hia ngā momo tapahinga o ēnei tapawha kia hauruatia?   E hia ngā momo tapahinga o ēnei tapawha kia hauwhatia?   E hia ngā momo whakahoahoa ka āhei te hanga e whakaatu ana i te whero $\frac{3}{4}$ me te $\frac{1}{4}$ kikorangi?
Ngā matapae ***Anticipations***	

Rapanga 5	E toha orite ana a Tama rātou ko Lelei, ko Lily e rima ngā keke pua'a. He orite te āhua o ngā keke pua'a. E hia ngā kēkē ka whiwhi ia tangata? E toha orite ana a Tama rātou ko Lelei, ko Lily e whitu ngā keke pua'a. He orite te āhua o ngā keke pua'a. E hia ngā kēkē ka whiwhi ia tangata? E toha orite ana a Tama rātou ko Lelei, ko Lily e whā ngā keke pua'a. He orite te āhua o ngā keke pua'a. E hia ngā kēkē ka whiwhi ia tangata?
Whakaaro Matua Pāngarau ***Big Ideas***	Numbers can be described in many different ways including as fractions. The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. The real-world actions for addition and subtraction of whole numbers are the same for operations with fractions and decimals.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.
Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies,using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages.
Whāinga Ako ***Learning Outcomes***	• Share whole parts equally. • Solve problems that involve dividing a whole number into a fraction.

Reo Matatini Pāngarau ***Mathematical Language***	Whole, thirds, equal, equivalent.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who develop representations to justify their reasoning and either split all the keke pua'a in thirds or share as a whole and fractional amount. If the second solution is not used, then model as another way the teacher has seen used previously. **Connect:** Record the matching equations and solutions for each problem. $4 \div 3 = 1\frac{1}{3}$ $5 \div 3 = 1\frac{2}{3}$ $7 \div 3 = 2\frac{1}{3}$ Ask students to discuss the pattern that they notice. Ask them to use the pattern to solve: $8 \div 3 =$ $10 \div 3 =$
Kōrero Tautoko ***Teacher Notes***	• Have a picture of a plate of keke pua'a (steamed and fried meat filled buns) for students to see or discuss similar food your students eat. • Facilitate the students to notice the need to coordinate partitioning of the shared item with the number of sharers. This is the basis of students developing understanding of the multiplicative relationship of the numerator and denominator in a fraction. • Monitor for students using vocabulary which relates to equal sharing and thirds. • Notice students who use multiplicative thinking and see the link between five thirds and why.
Ngohe whakaharatau ***Independent Tasks***	E toha orite ana a Tama rātou ko Lelei, ko Lily e rima ngā keke pua'a. He orite te āhua o ngā keke pua'a. E hia ngā kēkē ka whiwhi ia tangata? E toha orite ana a Tama rātou ko Lelei, ko Lily e whitu ngā keke pua'a. He orite te āhua o ngā keke pua'a. E hia ngā kēkē ka whiwhi ia tangata? E toha orite ana a Tama rātou ko Lelei, ko Lily e iwa ngā keke pua'a. He orite te āhua o ngā keke pua'a. E hia ngā kēkē ka whiwhi ia tangata?
Ngā matapae ***Anticipations***	

Rapanga 6	Kei te tunu panikeke te Māmā o Mireka. Ka whakaaro a Mireka ko wai ngā tamaiti ka whiwhi te nuinga o ngā panikeke. Tokorua ngā tamaiti e toha ana e 3 ngā panikeke. Tokoiwa ngā tamaiti e toha ana e 9 ngā panikeke. Me whakaatu ou whakamārama i ngā ara rerekē.
Whakaaro Matua Pāngarau ***Big Ideas***	Numbers can be described in many different ways including as fractions. The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3} = 2 \div 3$. On the number line, $2 \div 3$ can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit ($2 \times \frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3} \times 2$); each is associated with the same point on the number line. Each fraction can be associated with a unique point on a number-line. There are an infinite number of fractions between any two fractions on the number line.
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Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages. **NA3-6:** Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality.
Whāinga Ako ***Learning Outcomes***	• Share whole parts equally. • Solve problems that involve dividing a whole number into a fraction.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, thirds, fraction, fractional number, whole number, eighths, equal, equivalent, section, piece, fair share
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who develop representations to justify their reasoning and either split all the panikeke into a fractional amount or share as a whole and fractional amount. If the second solution is not used, then model as another way the teacher has seen used previously. **Connect:** Use the student solutions to ask students to record these as equivalent fractions with mixed numbers and improper fractions. Ask the students to represent 10 eighths in a drawing and then record as a fraction and a whole number and a fraction (e.g., $\frac{10}{8}=1\frac{2}{8}$). Repeat for the different fractional amounts.
Kōrero Tautoko ***Teacher Notes***	• During the launch, model the panikeke as a rectangular representation. • Facilitate the students to notice the need to coordinate partitioning of the shared item with the number of sharers. This is the basis of students developing understanding of the multiplicative relationship of the numerator and denominator in a fraction. • Expect students to represent with drawings and ensure that they use the same whole size for each panikeke when drawing.

Ngohe whakaharatau ***Independent Tasks***	I tunu pārāoa tētahi Pāpā. Pehea te nui o tau pāraoa mēnā ka toha: 10 ngā kotinga ki ngā tangata e 6. 12 ngā kotinga ki ngā tangata e 8. E 6 ngā kotinga ki ngā tangata e 4. E 7 ngā kotinga ki ngā tangata e 5. Tā me te tuhi au whakautu.
Ngā matapae ***Anticipations***	

Rapanga 7	E hiahia ana a Miri ki te toha tana tiakereti ki āna hoa e 5. Kei ia hoa he hauwha o te tiakereti. E hia ngā tiakereti a Miri? E hiahia ana a Miri ki te toha tana tiakereti ki āna hoa e 8. Kei ia hoa he hautoru o te tiakereti. E hia ngā tiakereti a Miri?
Whakaaro Matua Pāngarau ***Big Ideas***	The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3}$ = 2 ÷ 3. On the number line, 2 ÷ 3 can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit (2 x $\frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3}$ x 2); each is associated with the same point on the number line.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.
Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages. **NA3-6:** Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality.

Whāinga Ako ***Learning Outcomes***	• Add unit fractions (quarters and thirds). • Multiply a fraction by a whole number.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, quarters, fourths, thirds, equivalent, numerator, denominator.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students who add all the fourths and get six fourths; or add the fourths and get six fourths and see this as equivalent to one whole and two fourths; or solve the problem as $6 \times \frac{1}{4} = 1\frac{2}{4}$ or $1\frac{1}{2}$. If either solution is not used, then model as another way the teacher has seen used previously. **Connect:** Record the solution for each task: $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=6 \times \frac{1}{4}=\frac{6}{4}$ $\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}=9 \times \frac{1}{3}=\frac{9}{3}$ How would you record the following two situations: Miri is sharing with 3 friends. She gives each friend $\frac{1}{2}$ Miri is sharing with 6 friends. She gives each friend $\frac{1}{8}$
Kōrero Tautoko ***Teacher Notes***	• Facilitate the students to notice that there are multiples of the fractional number which they can add or multiply. • Expect students to represent using drawings, number-line or fraction pieces to represent parts of the whole and to use the fractional parts to make wholes.
Ngohe whakaharatau ***Independent Tasks***	E hiahia ana a Miri ki te toha tana tiakereti ki āna hoa 10. Kei ia hoa he haurua o te tiakereti. E hia ngā tiakereti a Miri? E hiahia ana a Miri ki te toha tana tiakereti ki āna hoa e 5. Kei ia hoa he hauwha o te tiakereti. E hia ngā tiakereti a Miri? E hiahia ana a Miri ki te toha tana tiakereti ki āna hoa e 8. Kei ia hoa he hauono o te tiakereti. E hia ngā tiakereti a Miri?

Ngā matapae ***Anticipations***	

Rapanga 8	Ka rākei koe tō kēkē huritau ki ngā rare tiakereti M&M 20. Ka tapahi te kēkē kia hauwha ngā wāhanga me te toha ngā rare tiakereti M&M. E hia ngā M&M ki ia wāhanga? Ka rākei koe tō kēkē huritau ki ngā rare tiakereti M&M 18. Ka tapahi te kēkē kia toru ngā wāhanga me te toha ngā rare tiakereti M&M. He aha te hautanga o ngā rare M&M? E hia ngā M&M ki ia wāhanga? Ka rākei koe tō kēkē huritau ki ngā rare tiakereti M&M 40. Ka tapahi te kēkē kia 5 ngā wāhanga me te toha ngā rare tiakereti M&M. He aha te hautanga o ngā rare M&M? E hia ngā M&M ki ia wāhanga?
Whakaaro Matua Pāngarau ***Big Ideas***	The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3}$ = 2 ÷ 3. On the number line, 2 ÷ 3 can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit (2 x $\frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3}$ x 2); each is associated with the same point on the number line.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages.
Whāinga Ako ***Learning Outcomes***	• Find fractions of a set
Reo Matatini Pāngarau ***Mathematical Language***	Whole, quarters, fourths, thirds, fifths, sixths, section, piece, fair share, divide.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who have used a representation split into fraction parts and then have either used partitive division (e.g., 20÷ 4 = ?) or have used the inverse relationship and repeated addition or multiplication (e.g., 4 x ? = 20). If either solution is not used, then model as another way the teacher has seen used previously. **Connect:** Record the solution for each of the problems: $\frac{1}{4}$ of 20 = 5 $\quad$ 20 ÷ 4 = 5 $\frac{1}{3}$ of 18 = 6 $\quad$ 18 ÷ 3 = 6 $\frac{1}{5}$ of 40 = 8 $\quad$ 40 ÷ 5 = 8 What patterns and relationships do you notice? What is a rule for finding a fraction of a set?
Kōrero Tautoko ***Teacher Notes***	• During the launch, ensure that you reinforce that the set of jellybeans are one whole as part of developing the context. • Have concrete material available if needed for students to select (e.g., fraction tiles, strips of paper) and counters to represent the jellybeans. • Facilitate the students to notice that they are finding a fraction of a whole even when there are a number of items in that set. Also, draw attention to the denominator as naming what the whole is divided into.

Ngohe whakaharatau ***Independent Tasks***	12 ngā rare tāu. Ka toha koe ki tō hoa. He aha te hautanga? E hia ngā rare ka whiwhi kōrua? 24 ngā rare tāu. Ka toha koe ki ngā hoa e 3. He aha te hautanga? E hia ngā rare ka whiwhi koutou? He aha te hauwha o te 8? He aha te hauwha o te 80? He aha te haurua o te 10? He aha te haurua o te 100? He aha te hautoru o te 6? He aha te hautoru o te 60?
Ngā matapae ***Anticipations***	

Rapanga 9	Kei te tākaro tahi a Tino me āna hoa e 3 i ngā anga pipi. I kohi 28 ngā anga pipi.Ka toha ngā anga pipi katoa. E hia ngā anga pipi ka whiwhi ia tamaiti? He aha te hautanga ka whiwhi ia tamaiti? Kei te tākaro tahi a Tino me āna hoa e 5 i ngā anga pipi. I kohi 60 ngā anga pipi.Ka toha ngā anga pipi katoa. E hia ngā anga pipi ka whiwhi ia tamaiti? He aha te hautanga ka whiwhi ia tamaiti? Kei te tākaro tahi a Tino me āna hoa e 7 i ngā anga pipi. I kohi 40 ngā anga pipi.Ka toha ngā anga pipi katoa. E hia ngā anga pipi ka whiwhi ia tamaiti? He aha te hautanga ka whiwhi ia tamaiti?
Whakaaro Matua Pāngarau ***Big Ideas***	The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3}$ = 2 ÷ 3. On the number line, 2 ÷ 3 can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit (2 x $\frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3}$ x 2); each is associated with the same point on the number line.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages.
Whāinga Ako ***Learning Outcomes***	• Find fractions of a set
Reo Matatini Pāngarau ***Mathematical Language***	Whole, quarters, fourths, thirds, fifths, sixths, section, piece, fair share, divide.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who have used a representation split into fraction parts and then have either used partitive division (e.g., 20÷ 4 = ?) or have used the inverse relationship and repeated addition or multiplication (e.g., 4 x ? = 20). If either solution is not used, then model as another way the teacher has seen used previously. **Connect:** Record the solution for each of the problems: $\frac{1}{4}$ of 28 = 7 so 28 ÷ ? = 7 $\frac{1}{6}$ of 60 = 6 60 ÷ ? = 6 ? of 40 = 8 40 ÷ 5 = 8 ? of 10 = 2 ? ÷ ? = ? What patterns and relationships do you notice? What is a rule for finding a fraction of a set?
Kōrero Tautoko ***Teacher Notes***	• During the launch, ensure that you reinforce that the set of acorns are one whole as part of developing the context. • Have concrete material available if needed for students to select (e.g., fraction tiles, strips of paper) and counters to represent the acorns. • Facilitate the students to notice that they are finding a fraction of a whole even when there are a number of items in that set. Also, draw attention to the denominator as naming what the whole is divided into.

Ngohe whakaharatau ***Independent Tasks***	He aha te hauwha o te 4? He aha te hauwha o te 40? He aha te hauwha o te 400? He aha te haurua o te 20? He aha te haurua o te 200? He aha te haurua o te 220? He aha te hautoru o te 9? He aha te hautoru o te 90? He aha te hautoru o te 990? He aha te hauwha o te 8? He aha te hauwha o te 40? He aha te hauwha o te 48? He aha te hauono o te 6? He aha te hauono o te 30? He aha te hauono o te 36? He aha te hautoru o te 9? He aha te hautoru o te 30? He aha te hautoru o te 39?
Ngā matapae ***Anticipations***	

Rapanga 10	Ka hanga a Tiare i tētahi mea roroha (elastic). 3 ngā mita kia hanga tana mea roroha, engari ka hoatu tana Māmā i ētahi mea paku noa. Tuatahi ka hoatu tana Māmā he $1\frac{1}{2}$ mita. Engai ka kohi e 3 ngā mea $\frac{1}{2}$ mita te roanga. Pehea te roanga o āna roroha katoa? He maha te roroha ki te hanga tana mea tākaro roroha? Ka hanga a Tiare i tētahi mea roroha (elastic). 3 ngā mita kia hanga tana mea roroha, engari ka hoatu tana Māmā i ētahi mea paku noa. Tuatahi ka hoatu tana Māmā he $2\frac{1}{4}$ mita. Engai ka kohi e 3 ngā mea $\frac{1}{4}$ mita te roanga. Pehea te roanga o āna roroha katoa? He maha te roroha ki te hanga tana mea tākaro roroha?
Whakaaro Matua Pāngarau ***Big Ideas***	Numbers can be described in many different ways including as fractions. The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. The real-world actions for addition and subtraction of whole numbers are the same for operations with fractions and decimals.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplication strategies with whole numbers, fractions, decimals, and percentages. **NA3-6:** Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality.
Whāinga Ako ***Learning Outcomes***	• Change fractions to equivalent fractions. • Solve problems that involve adding fractions.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, sixths, eighths, equal, equivalent.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who have recognised the need to add like fractions using informal methods with representations. **Connect:** $\frac{1}{2}+\frac{1}{2}=\frac{2}{2}$ $\frac{1}{4}+\frac{1}{4}=\frac{2}{4}$ $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=\frac{3}{4}$ $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=\frac{4}{4}$ What patterns do you notice? Can you describe a rule for adding fractions with the same denominators?
Kōrero Tautoko ***Teacher Notes***	• Have concrete material available if needed for students to select (e.g., fraction tiles). • Facilitate the students to notice that to add fractions the denominators need to be the same. • Monitor for students using vocabulary of equivalence and relational thinking.

Ngohe whakaharatau ***Independent Tasks***	$\frac{1}{2}+\frac{1}{2}+\frac{1}{2}=$ $\frac{1}{4}+\frac{1}{4}=$ $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=$ $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=$ $\frac{1}{4}+\frac{2}{4}=$ $\frac{1}{8}+\frac{3}{8}+\frac{2}{8}=$ $\frac{2}{6}+\frac{3}{6}=$ $\frac{3}{10}+\frac{1}{10}=$ $\frac{2}{10}+\frac{3}{10}+\frac{4}{10}=$
Ngā matapae ***Anticipations***	

Rapanga 11 (Optional)	Taunakihia ma ngā tauira e toru ki ēnei whārite i raro nei: He orite te $\frac{2}{4}$ o tētahi tiakereti ki tētahi $\frac{1}{2}$? He orite te $\frac{1}{8}$ o tētahi tiakereti ki te $\frac{1}{2}$? He orite te $\frac{1}{4}$ o tētahi tiakereti ki $\frac{2}{8}$? Ko tēhea te hautanga e orite ana ki $\frac{1}{2}$? $\frac{2}{4}$ $\frac{3}{6}$ $\frac{4}{8}$ He nui ake te $\frac{4}{8}$ ki te $\frac{3}{4}$ o tētahi tiakereti? He nui ake tētahi tiakereti i $\frac{1}{2}+\frac{1}{2}$?
Whakaaro Matua Pāngarau ***Big Ideas***	The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3}$ = 2 ÷ 3. On the number line, 2 ÷ 3 can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit (2 x $\frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3}$ x 2); each is associated with the same point on the number line. Each fraction can be associated with a unique point on a numberline.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages.
Whāinga Ako ***Learning Outcomes***	• Change fractions to equivalent fractions. • Compare fractions with different denominators. • Solve problems that involve adding or subtraction fractions.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, thirds, fractional number, eighths, equal, equivalent, numerator, denominator.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who could explain and justify their reasoning using informal methods to represent their answers. **Connect:** Write your own true or false sentences involving fractions.
Kōrero Tautoko ***Teacher Notes***	• Have students work through these together in their groups or pairs, one by one, discuss and explain and then complete the next one. • Facilitate the students to notice that they do not always need to use materials or drawings if they can use the notation to explain and justify their reasoning. • Notice students who use relational reasoning.
Ngohe whakaharatau ***Independent Tasks***	Raupapahia ēnei: 1. $\frac{1}{2}, \frac{1}{4}, \frac{1}{3}, \frac{1}{8}, \frac{1}{6}$ 2. $\frac{4}{8}, \frac{2}{4}, \frac{3}{6}, \frac{1}{2}$ 3. $\frac{3}{4}, \frac{5}{8}, \frac{2}{4}, \frac{7}{8}, \frac{1}{8}$ 4. $\frac{4}{4}, \frac{1}{2}, \frac{6}{8}, \frac{1}{4}, \frac{2}{8}$ 5. $\frac{1}{2}, \frac{2}{3}, \frac{1}{6}, \frac{5}{6}, \frac{1}{3}, \frac{3}{6}$

Ngā matapae ***Anticipations***	

Rapanga 12 (Optional)	He $\frac{1}{2}$ o tētahi kapu huka ki te tunu rewana. Ka tunu ato kuia e 6 ngā rewana. E hia ngā kapu huka ki te tunu ngā rewana e 6. He $\frac{2}{3}$ o tētahi kapu huka ki te tunu rewana. Ka tunu ato kuia e 9 ngā rewana. E hia ngā kapu huka ki te tunu ngā rewana e 9. He $\frac{3}{8}$ o tētahi kapu huka ki te tunu rewana. Ka tunu ato kuia e 6 ngā rewana. E hia ngā kapu huka ki te tunu ngā rewana e 6.
Whakaaro Matua Pāngarau ***Big Ideas***	The whole is important in naming fractions. A fraction is relative to the size of the whole or unit A comparison of a part to the whole can be represented using a fraction. A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number in a fraction tells how many equal parts the whole or unit is divided into. The top number tells how many equal parts are indicated. A fraction describes division ($\frac{a}{b}$ = a ÷ b, a & b are integers & b - 0), and it can be interpreted on the number line in two ways. For example, $\frac{2}{3}$ = 2 ÷ 3. On the number line, 2 ÷ 3 can be interpreted as 2 segments where each is $\frac{1}{3}$ of a unit (2 x $\frac{1}{3}$) or $\frac{1}{3}$ of 2 whole units ($\frac{1}{3}$ x 2); each is associated with the same point on the number line. Each fraction can be associated with a unique point on a numberline.
Hononga ki te Marau	Ka mohio ki nga hautau, pera i nga haurua, nga hautoru, nga hauwha, nga haurima me nga hautekau: - te tuhi i nga tohu hautau, te tikanga o te taurunga me te tauraro o tetahi hautau. Te raupapa hautau mama me nga hautau e orite ana te tauraro. Ka whakaoti rapanga e whai wahi mai ana te tauoti me te hautau, ka whakamarama hoki i te: • rautaki tatau; • rautaki whakaropu; • rautaki tohatoha orite; • rautaki wawahi tau tapiripiri mama. Ka marama ki te whaitakenga o te otinga o tetahi rapanga.

Hononga Marautanga ***Curriculum Links***	**NA2-1:** Use simple additive strategies with whole numbers and fractions. **NA2-5:** Know simple fractions in everyday use. **NA2-6:** Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. **NA3-1:** Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages.
Whāinga Ako ***Learning Outcomes***	• Change fractions to equivalent fractions. • Compare fractions with different denominators. • Solve problems that involve adding or subtraction fractions.
Reo Matatini Pāngarau ***Mathematical Language***	Whole, half, halves, quarters, fourths, thirds, fractional number, eighths, equal, equivalent, numerator, denominator.
Tohatoha Whakaaro/Wā Hononga ***Sharing back/ Connect***	Select students to share who could explain and justify their reasoning using informal methods to represent their answers. **Connect:** Write your own true or false sentences involving fractions.
Kōrero Tautoko ***Teacher Notes***	• Have students work through these together in their groups or pairs, one by one, discuss and explain and then complete the next one. • Facilitate the students to notice that they do not always need to use materials or drawings if they can use the notation to explain and justify their reasoning. • Notice students who use relational reasoning.
Ngohe whakaharatau ***Independent Tasks***	Complete one of the Assessment Tasks • N8A Fractions (region) • NR2A Fractions (set)
Ngā matapae ***Anticipations***	
