Sharing pizza

Purpose:
You can help your child explore, and use materials to represent and solve practical maths problems involving fractions.

What you need:
- Play dough
- A plastic knife, or 'safe' kitchen knife

What to do:
Recognise that fractions can be challenging for some children.
In posing the following problems to your child, it is important that you make time to listen to and watch their explanation of their solution, and through discussion, help them to understand the important ideas that are part of these problems.
- Have your child make several 'pretend' small pizzas out of the dough and act out the following problems using these 'pizzas'.

Pose these problems:
- "If you have two halves of a pizza, how much pizza do you have altogether? Can you write that?" (2/2 = 1) Repeat with other common fraction values such as four quarters, six sixths.
- "If you cut a pizza in half and eat one half, how much is left?" Repeat with thirds, quarters and other common fraction values.
  "Can you write that as an equation?" eg. 2/2 – 1/2 = 1/2; 3/3 – 1/3 = 2/3, 4/4 - 1/4 = 3/4
- "We buy a meat lovers' pizza, a chicken pizza and a BBQ pizza and cut each pizza into eighths. There are some pieces of each pizza left over. How much pizza is left altogether?"
  Eg. 1/8 + 5/8 + 3/8 = ?
  Vary the story. eg. "...'cut into sixths' and these amounts are left: 5/6 + 2/6 + 2/6..."
  How do you write that?
- "You have 5/8 pizza and give away 3/8 of a pizza. How much pizza is left?" (2/8). Your child may recognize this is also 1/4, but equivalent fractions are not the focus here.
  Vary the story. "…2 and 1/4   pizzas and give away 3/4…" etc.
  "How do you write that?"

What to expect your child to do:
- Make, name and correctly write common unit fractions (these have a numerator of 1, for example 1/2, 1/3, 1/4, 1/5, etc.)
- Recognise and be able to show other names for 1 whole. For example: 2/2 = 1, or two halves is the same as 1 (whole), 3/3 = 1, or three thirds is equal to 1, 8/8 = 1, or eight eighths of a pizza makes 1 whole pizza.
- Add fraction parts of the same kind (that have the same denominator). For example 5/8 + 4/8 = 9/8 = 1 1/8
- Recognise that a fraction greater than 1 eg. 9/8 (also known as an improper fraction), has the same value as 1 1/8 (known as a mixed numeral because it has the whole number 1, and a fraction, 1/8)
- Subtract fraction parts of the same kind (that have the same denominator) For example: 5/8 – 2/8 = 3/8.

He Kupu Māori:

playdough	poikere
knife	māripi
pizza	parehe
whole pizza	parehe tūtahi
half	haurua
third	hautoru
quarter	hauwhā
equal parts	wāhanga ōrite
equation	whārite
two thirds	rua hautoru
three quarters	toru hauwhā
fraction story	paki hautau

He Whakawhitinga Kōrero:

- E rua ēnei haurua parehe. E hia ngā parehe tūtahi? He aha te whārite e hāngai ana ki tērā? *(Here are two half pizzas. How many whole pizzas is that? What is the equation that corresponds to that?).* 2/2 = 1
- Anei te whārite. Me pēhea te pānui? He ōrite te rua haurua ki te kotahi. *(Here is the equation. How do we read it? Two halves equals one.)*
- Anei tētahi parehe tūtahi. Tapahia kia haurua. Mēnā ka kainga tētahi haurua, he aha te hautanga parehe e toe ana? He aha te whārite e hāngai ana ki tērā? *(Here is a whole pizza. Cut iT in half. If we eat one half, what fraction of pizza is left? What is the equation that corresponds to that?)* 1 – ½ = ½
- Anei te whārite. Me pēhea te pānui? Tangohia te haurua i te kotahi, ka haurua. *(Here is the equation. How do we read it? One take away a half equals a half.)*
- Tapahia tēnei parehe kia hautoru. E hia ngā wāhanga ōrite? He aha te whārite e hāngai ana? *(Cut this pizza in to thirds. How many equal sized pieces? What is the corresponding equation?)* 3/3 = 1
- Tangohia te hautoru parehe i te toru hautoru parehe. He aha te hautanga parehe e toe ana? He aha te whārite? *(Take one third pizza away from three thirds pizza. What fraction of pizza is left? What is the equation?)* 3/3 – 1/3 = 2/3
- E toru ngā parehe tūtahi. Ka tapahia kia hauwaru. E hia ngā wāhanga ōrite o ia parehe? *(We have three whole pizzas. We cut them in to eighths. How many equal sized pieces of each pizza are there?)*
- Ka kainga ētahi wāhanga o ēnei parehe. Kotahi hauwaru e toe ana i tēnei parehe, e rima hauwaru e toe ana i tēnei, e toru hauwaru e toe ana i tēnei. He aha te wāhanga o ia parehe i kainga? he aha ngā whārite e hāngai ana? *(Some of the pieces of these pizzas are eaten. One eighth of this one, five eighths of this one, and three eighths of this one. What fraction of each pizza was eaten? What are the corresponding equations?)*
  1 – 1/8 = 7/8   1 – 5/8 = 3/8   1 – 3/8 = 5/8
- Tāpiria ēnei hautanga parehe e toe ana, kotahi hauwaru, tāpiria te rima hauwaru, tāpiria te toru hauwaru. E hia katoa ngā hauwaru? E hia ngā parehe tūtahi me ngā hautanga parehe? He aha te whārite e hāngai ana? *(Add together these pizza fractions that are left over, one eighth plus five eighths plus three eighths. How many eighths altogether? How many whole pizzas and fraction pieces is that? What is the corresponding equation?)*
  1/8 + 5/8 + 3/8 = 9/8
- Whakaaturia tēnei paki hautau ki ngā parehe poikere. E rima hauwaru parehe kei a koe. Ka kainga te toru hauwaru. E hia te hautanga parehe e toe ana? He aha te whārite e hāngai ana? *(Show me this fraction story with playdough pizzas. You have five eighths of a pizza. You eat three eighths. What fraction of a whole pizza is left? What is the corresponding equation?)*
  5/8 – 3/8 = 2/8