Approach: One to one   *Level:* Year 4 and year 8
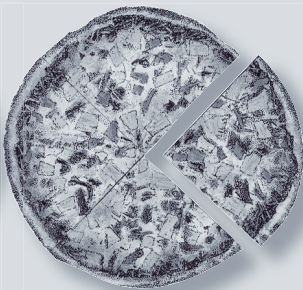
Focus: Understanding fractions and calculating with them.

Resources: Two model pizzas in sections on plates.

Questions/instructions:

Here are 2 whole pizzas for a family dinner. This one is a pepperoni pizza and this one is a ham and pineapple pizza. After dinner, some of each pizza was left over.

Remove 2 segments of the pepperoni pizza and one segment of the ham and pineapple pizza.

Do not use fractional terms at this point.

		% responses	
		2001 ('97) year 4	2001 ('97) year 8
1. How much of the pepperoni pizza is left? *PROMPT: (if answer not given as fraction) What fraction or part is left?*	$\frac{1}{2}$	80 (75)	97 (97)
2. How much of the ham and pineapple pizza is left? *PROMPT: (if answer not given as fraction) What fraction or part is left?*	$\frac{3}{4}$	54 (54)	89 (89)
3. Altogether, how much pizza is left? $1\frac{1}{4}$ or $\frac{5}{4}$ or $\frac{5}{8}$ of total		51 (46)	81 (76)

Now we are going to think about 2 different ways of using up the pizza that is left over.

		year 4	year 8
4. If 4 children had a quarter piece of pizza each, then how much would be left? *PROMPT: You can move the pieces of pizza around to help you work it out.*	$\frac{1}{4}$	52 (49)	73 (75)

Ensure the students are still looking at the 2 segments of pepperoni pizza and the 3 segments of the ham and pineapple pizza.

5. This time imagine that the two of us are going to have an equal share of all of the pizza that is left. What fraction or part of a whole pizza do we each get?

		year 4	year 8
PROMPT: You can move the pieces of pizza around to help you work it out.	$\frac{5}{8}$	•	10 (8)
2 quarters and one eighth		•	9 (13)

6. Can you explain to me how you worked that out?   *not marked*

• *not asked for year 4*

Commentary

On questions 1–4, on average about 25 percent more year 8 than year 4 students succeeded. Year 4 students performed a little better in 2001 than in 1997, but there was no consistent pattern of change for year 8 students.