

Approach: One to one
 Level: Year 4 and year 8

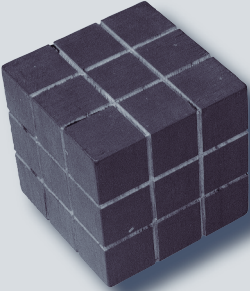
Focus: Spatial relationships.

Resources: Cube marked to be cut into 27 smaller cubes, and painted red, recording book.

Questions/instructions:

Hand student the red cube.

Have a look at this wooden cube that has been painted red. Someone has started cutting it. Imagine that they are going to finish cutting along the lines so there would be many smaller cubes.

Write down the numerical answers you're given.		% responses	
		2001 ('97) year 4	2001 ('97) year 8
1. How many smaller cubes would there be?	27	13 (13)	47 (58)
2. How many of the smaller cubes would have only one side or face that is painted red?	6	19 (18)	40 (49)
3. How many of the smaller cubes would have two sides that are painted red?	12	11 (7)	25 (28)
4. How many of the smaller cubes would have three sides that are painted red?	8	28 (31)	61 (72)
5. How many of the smaller cubes would have no sides or faces that are red?	1	14 (20)	51 (64)
Show student the answers you've written down for them.			
Here are the answers you gave me to write down. Do you want to change any of them?			
Write down any changes in the second column on the Recording Sheet.			
	No. changed: 2-5	15 (12)	22 (20)
	1	24 (24)	34 (34)
	0	61 (64)	44 (46)
	Total score: 4-5	4 (4)	24 (36)
	3	6 (7)	22 (20)
	2	14 (14)	18 (18)
	0-1	76 (75)	36 (26)

Commentary

This task proved challenging for most year 4 students and many year 8 students. Compared to the 1997 students, 2001 year 4 students performed very similarly but 2001 year 8 students scored noticeably lower.