

Calculator changes

Approach: Station

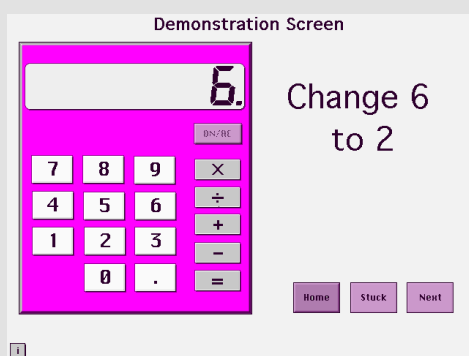
Level: Year 4 and year 8

Resources: Macintosh Powerbook 5300cs laptop computer with specially written Hypercard® programme.
Cue card for using the programme. Prompt card containing initial instructions.

Questions/instructions

Before attempting this task, students confirmed that they knew how to use the computer by working through the Hypercard® programme MacMoves. They then followed these written instructions:

You have 7 minutes to do this activity. It is timed on the computer. In this activity you will see a calculator on the computer screen. The instructions for the activity are given on the computer. Remember to try solve the problems with as few taps on the keys as possible.



The students were guided through a demonstration problem step by step and introduced to the help buttons, before beginning the questions.

Commentary

Year 8 students were much more successful than year 4 students, with 75 percent of year 8 students completing 6 or more items successfully, compared to only 24 percent of year 4 students. Many students tended to use addition or subtraction for items which could be solved most efficiently using multiplication or division. A surprisingly high percentage of year 4 students reached the decimal items, on which they were not expected to be able to succeed.

	% correct		minimum keystrokes		not attempted %	
	y4	y8	y4	y8	y4	y8
1. Change 4 to 6	55	84	36	65	0	0
2. Change 5 to 15	62	92	7	43	2	0
3. Change 30 to 10	65	89	3	32	5	0
4. Change 27 to 20	68	91	60	84	8	1
5. Change 24 to 424	43	80	34	68	14	1
6. Change 4 to 36	39	86	6	44	20	2
7. Change 258 to 148	31	69	17	50	25	2
8. Change 320 to 32	18	56	2	21	35	9
9. Change 0.6 to 1	10	61	2	23	44	12
10. Change 1 to 0.2	7	55	0	3	52	16
11. Change 0.5 to 0.05	4	26	2	11	58	23
12. Change 0.05 to 5	2	26	1	12	65	30
						% responses
						y4 y8
Number correct: 10-12						4 38
7-9						20 37
4-6						33 18
1-3						22 4
0						21 3