Digital Dilemmas

You need ☑ a photocopy of the table and graph copymaster
☑ a calculator (optional) ☑ a classmate

Activity

Jake and Melanie want to take digital photos of their class camping trip. The school camera has 3 megabytes (MB) of memory (which is the same as 3 000 kilobytes [kB]) and can take photos in two different formats.

Standard photo	Extra-wide photo
125 kilobytes	375 kilobytes

1. Explain how they could work out how many photos could be stored in the camera if:
   a. all the photos were standard size
   b. all the photos were extra wide.

2.

If we only took 1 extra-wide photo, that would leave us 2 625 kilobytes for standard photos.

We could take up to 21 standard photos with 2 625 kilobytes.

Explain how Melanie knows that there is enough memory left for 21 standard photos.

3. a. Jake records different combinations of photo sizes that they could take.
      i. Complete your copy of the table on the next page. Use a calculator if you need to.
      ii. Complete your copy of the table for standard photos (see the copymaster).
   b. Discuss with a classmate how you could use the tables.

Extra-wide photos 375 kB		
Number of photos	Memory used (kB)	Memory remaining (kB)
0	0	3 000
1	375	
2		
3		
4		
5		
6		
7		
8		

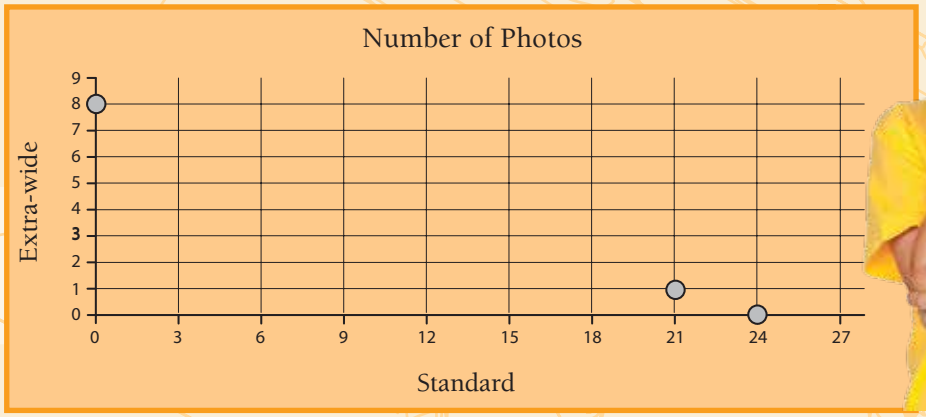
For 3 000 – 375, I could go 3000 – 400 + 25 …

375 + 375 = 750kB. The even numbers of photos will be easy to work out.

c. If Jake and Melanie took half the photos in standard size and half the photos in extra-wide, what is the greatest number of photos they could take?

4. Jake uses the information from the tables to draw a graph.

The dots on this graph show what happens if we use up all the 3 000 kilobytes of memory. So far, I've shown three different combinations of formats that do this.



a. Complete your copy of the graph.

b. Explain what happens to the number of standard photos Jake or Melanie could take each time they take an extra-wide photo.