

# The Great Factor Hunt

You need  a computer spreadsheet  a classmate

**Factors** are whole numbers that multiply together. For example,  $7 \times 3 = 21$ , so 7 and 3 are factors of 21.

## Activity One

Hello, I'm your guide, Milo the Mouse. I'm going to help you use spreadsheets to find factors.

My cousin Tino is a factor hunter. This spreadsheet shows his search for the factors of 10.

	A	B	C
1	Number	10/number	
2	1	10	
3	2	5	
4	3	3.33333333	
5	4	2.5	
6	5	2	
7	6	1.66666667	
8	7	1.42857143	
9	8	1.25	
10	9	1.11111111	
11	10	1	
12			

In spreadsheet language, / means the same as  $\div$ .

=10/A6  
(formula)



=10/A11  
(formula)

Trapper Tino used formulae and the Fill Down function to catch all the factors of 10.

1. What formula applies to cell B3?
2. How can you identify which numbers in column A are factors of 10?
3. Use the Fill Down function on a spreadsheet to find all the factors for:
  - a. 12
  - b. 28
  - c. 17
  - d. 36

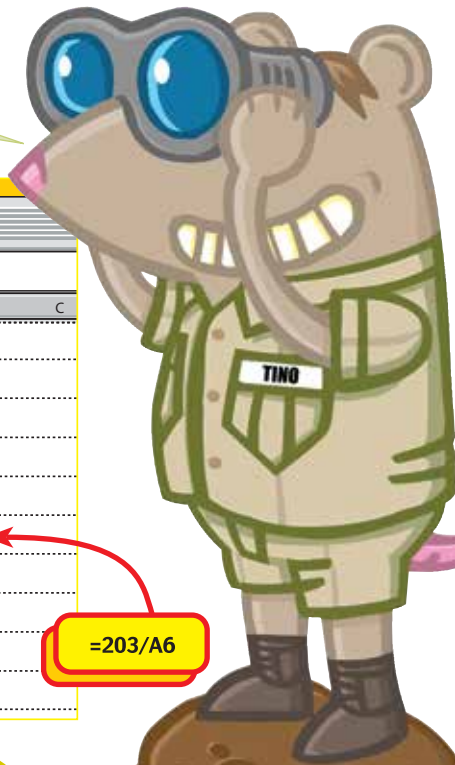
To find the factors of 12, your first formula will be  $=12/A2$ .

4. Trapper Tino knew it would take ages to find all the factors of 203 using a pencil and paper, so he used a spreadsheet.

- a. What factors of 203 are shown on this part of his spreadsheet?
- b. Are there any more factors of 203? How do you know?

	A	B	C
1	Number	203/number	
2	1	203	
3	2	101.5	
4	3	67.6667	
5	4	50.75	
6	5	40.6	
7	6	33.8333	
8	7	29	
9	8	25.375	
10	9	22.5556	

=203/A6



## Activity Two

Milo the Mouse gives you some challenges created by other great factor hunters. Your task is to solve them!

1. Prime numbers have only 2 factors, themselves and 1.
- Apart from 2, all prime numbers are odd. Why is this?
  - What is the prime number closest to 100?
  - Why isn't 1 a prime number?



Eagle-eyes Broadmore

- 2.
- Most numbers have an even number of factors. Explain why, using the number 18.
  - Some special numbers have an odd number of factors. For example, 25 has 3 factors, 1, 5, and 25.
    - Find some of these special numbers.
    - What are these numbers called?
    - Explain why they have an odd number of factors.



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3. There is a number between 50 and 70. Its factors, including 1 and itself, add up to 84. What is the number?



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4. A number less than 100 has 5 factors. 4 of these factors are divisible by 3. The factors add up to 121. What is the number?



SMELL IT OUT SNUFFER

5. Make up some factor problems for a classmate to solve.