

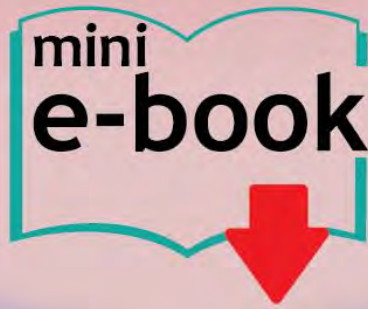


Maths

# Factors And Multiples



## For Upper Primary



## Contents

Investigating Factors.....	Page 3
Investigating Multiples .....	Page 4
Is It Divisible? .....	Page 5
Divisibility Rules.....	Page 6
Answers.....	Page 7

Preview

Title: **Factors And Multiples** For Upper Primary  
 Published by **Ready-Ed Publications** © 2019  
 Taken from: OzzieMaths Series, Maths: Year 5  
 Author: Brenda Gurr      Illustrator: Alison Mutton

### Copyright Notice

The purchasing educational institution and its staff have the right to make copies of the whole or part of this book, beyond their rights under the Australian Copyright Act 1968 (the Act), provided that:

1. *The number of copies does not exceed the number reasonably required by the educational institution to satisfy its teaching purposes;*
2. *Copies are made only by reprographic means (photocopying), not by electronic/digital means, and not stored or transmitted;*
3. *Copies are not sold or lent;*
4. *Every copy made clearly shows the footnote, 'Ready-Ed Publications.'*

Any copying of this book by an educational institution or its staff outside of this blackline master licence may fall within the educational statutory licence under the Act.

The Act allows a maximum of one chapter or 10% of the pages of this book, whichever is the greater, to be reproduced and/or communicated by any educational institution for its educational purposes provided that educational institution (or the body that administers it) has given a remuneration notice to Copyright Agency Limited (CAL) under Act.

### For details of the CAL licence for educational institutions contact:

Copyright Agency Limited  
 Level 19, 157 Liverpool Street  
 Sydney NSW 2000  
 Telephone: (02) 9394 7600  
 Facsimile: (02) 9394 7601  
 E-mail: info@copyright.com.au

### Reproduction and Communication by others

Except as otherwise permitted by this blackline master licence or under the Act (for example, any fair dealing for the purposes of study, research, criticism or review) no part of this book may be reproduced, stored in a retrieval system, communicated or transmitted in any form or by any means without prior written permission. All inquiries should be made to the publisher.

**Ready-Ed Publications:**  
**info@readyed.com.au**  
**www.readyed.net**

# Investigating Factors

**Factors are whole numbers that you can multiply together to make another number.**

**For example, the factors of 12 are 1, 2, 3, 4, 6 and 12 because:**

$$1 \times 12 = 12$$

$$2 \times 6 = 12$$

$$3 \times 4 = 12$$

**Some numbers have many factors while some only have two: 1 and the number itself.**

**Complete these questions about factors.**

**1.** Write the missing factors for these numbers to complete each sequence.

**a. 10:** 1, 2, 5, \_\_\_

**c. 9:** 1, \_\_\_\_\_

**b. 28:** \_\_\_, 2, 4, \_\_\_, 14, \_\_\_

**d. 13:** 1, \_\_\_\_\_

**2.** Complete the quiz about your answers to question 1.

**a.** Which number had the least factors? \_\_\_\_\_

**b.** Which number/s were common to all? \_\_\_\_\_

**c.** What differences do you notice about the factors for odd and even numbers?  
\_\_\_\_\_

**3.** Write the factors for each number below as an ascending sequence, then draw lines between any factor pairs. An example has been done for you.

**a.** 20  $\overbrace{1, 2, 4, 5, 10, 20}$

**b.** 16 \_\_\_\_\_

**c.** 81 \_\_\_\_\_

**d.** 42 \_\_\_\_\_

**4.** Circle the factors in each sequence below for the number indicated, then write which factors are missing.

**a. 25:** 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23

Factor missing: \_\_\_\_\_

**b. 100:** 4, 10, 16, 22, 28, 34, 40, 46, 52, 58, 64, 70

Factors missing: \_\_\_\_\_

**c. 63:** 1, 7, 13, 19, 25, 31, 37, 42

Factors missing: \_\_\_\_\_

**d. 90:** 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

Factors missing: \_\_\_\_\_

# Investigating Multiples

**Multiples are closely related to factors. The multiples of a number are all the numbers in its times table.**

**For example, the multiples of 10 are 10, 20, 30, 40, 50, 60, 70 and so on.**

**The amount of multiples for any number is, in fact, endless!**

**Complete these questions about multiples.**

**1.** Each sequence below shows some of the multiples of a mystery number. Write the number in the box next to each sequence.

a. 3, 6, 9, 12, 15, 18

Mystery number:

b. 14, 21, 28, 35, 42

Mystery number:

c. 26, 39, 52, 65, 78

Mystery number:

**2.** Circle the multiples of 5 in each sequence below.

a. 5, 8, 11, 14, 17, 20, 23, 26, 29, 32

b. 10, 17, 24, 31, 38, 45, 52, 59, 66, 73

c. 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

**3.** Which numbers in the sequence below are multiples of 4 and 6? Circle them in two different colours (red for multiples of 4 and blue for multiples of 6).

2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

Comment on any common numbers or patterns that you notice.

-----

**4.** Fill in the missing multiples of each number below to make a sequence.

a. 9: 9, 18, 27, \_\_, \_\_, \_\_, \_\_, \_\_

b. 8: 8, \_\_, \_\_, \_\_, 40, \_\_, \_\_, 64, 72, \_\_

c. 11: 22, \_\_, \_\_, 55, \_\_, \_\_, 88, 99, \_\_

# Is It Divisible?

If one number can be divided evenly by another number, we say it is divisible by that number. For example, 24 is divisible by 2 because it divides evenly into 24 exactly 12 times. However, 25 is not divisible by 2 because there is a remainder of 1.

It is useful to remember that any number is always divisible by its factors.

There are also rules about divisibility. These help you to understand quickly whether a number is divisible by another. Look at the divisibility rules on the right.

## Divisibility Rules

1. A number is divisible by 2 if the last digit is an even number. For example, 12, 256, 1078.
2. A number is divisible by 3 if the sum of the digits is divisible by 3. For example, 30, 669, 5715.
3. A number is divisible by 4 if the last two digits are divisible by 4. For example, 24, 916, 7020.
4. A number is divisible by 6 if the number is divisible by both 2 and 3. For example, 60, 132, 402.

**Study each number below. Use the divisibility rules above to say which numbers they are divisible by. It may be more than one of them! Explain how you worked out each one.**

Number	Divisible by	How I worked it out
a) 225		
b) 1078		
c) 6534		
d) 19036		
e) 15681		
f) 212122		

# Divisibility Rules

Find a partner to work with to answer these questions. Try to figure out some possible divisibility rules for each of the numbers below.

Hint: You can think about the divisibility rules given on page 10 to help you. You should also look for any patterns that you can see.

1. 15, 20, 105 and 200 are all divisible by 5. What might the divisibility rule for this number (5) be?



2. 9, 18, 27 and 900 are all divisible by 9. What might the divisibility rule for this number (9) be?



3. 10, 30, 60 and 200 are all divisible by 10. What might the divisibility rule for this number (10) be?



4. 12, 72, 120 and 600 are all divisible by 12. What might the divisibility rule for this number (12) be? (Hint: Figure out two other smaller numbers these numbers are also divisible by.)



## Answers

### Investigating Factors

**1.a)** 10; **b)** 1, 7, 28; **c)** 3, 9; **d)** 13

**2.a)** 13; **b)** 1; **c)** There were more factors for even numbers and they included the number 2.

**3.b)** 1, 2, 4, 8, 16; **c)** 1, 3, 9, 27, 81; **d)** 1, 2, 3, 6, 7, 14, 21, 42

**4.a)** 1, 5 should be circled; 25 is missing; **b)** 4, 10 should be circled; 1, 2, 5, 20, 25, 50 and 100 are missing; **c)** 1 and 7 should be circled; 9, 3, 21 and 63 are missing; **d)** 3, 6, 9, 15, 18 and 30 should be circled; 1, 2, 5, 10, 45 and 90 are missing.

### Investigating Multiples

**1.a)** 3; **b)** 7; **c)** 13

**2.a)** 5 and 20 should be circled

**b)** 10 and 45 should be circled

**c)** 15 and 30 should be circled

**3.** 4, 8, 12, 16, 20 and 24 should be circled in red (multiples of 4); 6, 12, 18 and 24 should be circled in blue (multiples of 6). The numbers 12 and 24 are common to both; the circled numbers are grouped in threes.

**4.a)** 36, 45, 54, 63, 72

**b)** 16, 24, 32, 48, 56, 80

**c)** 33, 44, 66, 77, 110

### Is It Divisible?

**a)**3; **b)**2; **c)**2, 3, 6; **d)**2, 4; **e)**3; **f)**2

### Divisibility Rules

**1.**The last digit is 0 or 5.

**2.**The sum of the digits is divisible by 9.

**3.**The last digit is 0.

**4.**The number is divisible by both 3 and 4.

Preview