

Cracking the Code



James Driver

© 2004 **Pacific Learning**

© 2002 Written by **James Driver**

Photography: title page and p. 14 Ancient Art & Architecture; p. 4 Ancient Art & Architecture; p. 6 Science & Society Picture Library; p. 7 Science & Society Picture Library (all); p. 12 Corbis UK (top), Ancient Art & Architecture (bottom left & right); p. 15 British Museum; pp. 16, 17 Ancient Art & Architecture; p. 18 Mary Evans Picture Library (top), Oxford Scientific Films/Maurice Tibbles (bottom); p. 19 Mary Evans Picture Library; p. 20 Science Photo Library (top), Telegraph Colour Library (bottom); p. 21 SPL (top), Corbis UK (bottom); p. 22 Tropix (left), RNIB, Peterborough (bottom); p. 23 S. & R. Greenhill; p. 24 National Gallery; p. 25 Ancient Art & Architecture (top right), OSF/G. MacLean (left), OSF/T. Heathcote (bottom); p. 26 Map reproduced from Ordnance Survey Landranger mapping with the permission of the Controller of Her Majesty's Stationery Office. © Crown copyright. Licence no. 100000249. Cover Photograph by Science & Society Picture Library; back Cover by Ancient Art & Architecture

Illustrated by Martin Aston, Stefan Chabluk, and Martin McKenna

U.S. edit by **Alison Auch**

With many thanks to Dr. Paul Stephens and Alex Dumestre for their expert and patient assistance.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, taping, or any information storage and retrieval system, without permission in writing from the publisher.

This Americanized Edition of *Cracking the Code*, originally published in England in 2002, is published by arrangement with Oxford University Press.

08 07 06 05 04
10 9 8 7 6 5 4 3 2 1

Published by

Pacific Learning

P.O. Box 2723

Huntington Beach, CA 92647-0723









www.pacificlearning.com

ISBN: 1-59055-437-X

PL-7522

Printed in China.

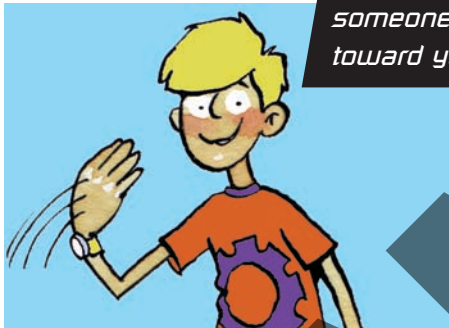
CONTENTS

	Introduction	
	What Is a Code?	4
	Different Types of Code	5
	Coding Machines	6
	Code-breaking Machines	7
	Making Your Own Code	8
	The Dancing Men	9
	Flag Codes and Semaphore	10
	Heraldry	11
	Writing Codes:	
	Pictograms to Phonograms	12
	The Alphabet	14
	The Rosetta Stone	16
	Runes	17
	International Languages	18
	Morse Code	19
	DNA: The Code for Life	20
	Binary: The Code of the Computer	21
	The Braille Alphabet	22
	Signing	23
	Symbols in Art	24
	The Doctrine of Signatures	25
	Maps	26
	Slang	27
	Body Language	28
	Fire, Smoke, and Sound	29
	Numbers	30
	Glossary	31
	Index	32

WHAT IS A CODE?

If you can see and hear someone, it is very easy to send that person a message. As long as you both speak the same language, you can talk to each other, shout at each other, or whisper secretly.

If you can see, but cannot hear each other, you can still communicate by making signals with your hands.



You can ask someone to come toward you.



You can ask someone to stop.

However, if you cannot see or hear the other person, or if you want your message to be a secret that no one else can understand, you will have to send it in a different way. You might use a code.

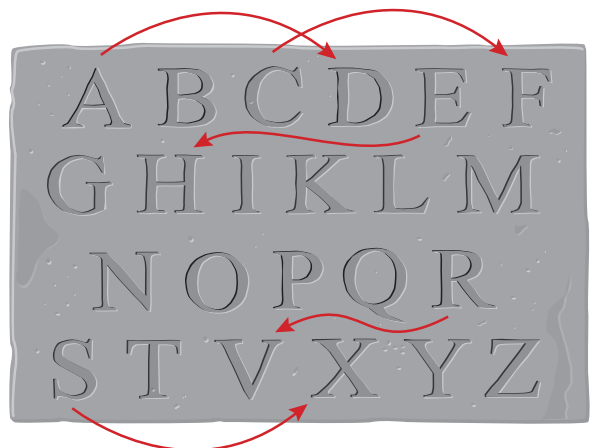


▲ Julius Caesar (102–44 BC)

Secret Codes

Julius Caesar, the famous Roman general, often sent messages that he did not want his enemies to read. To ensure secrecy, he used a very simple code.

The Roman **alphabet** had only twenty-three letters, but when Caesar wanted to send a confidential message, he did not spell words with the usual letters, he counted three letters ahead and used those letters instead. So in a coded message, his name CAESAR would be FDHXdV.



▲ The Romans did not have the letters "J," "U," or "W."

DIFFERENT TYPES OF CODE

Not all codes are secret. In fact, many have been used by millions of people.

Writing

Writing is a code. If you are writing in English, you use the twenty-six letters in the alphabet. The letters often stand for the sounds you make when you speak.

There are lots of different systems of writing, and they all use different codes. The ancient Egyptians wrote with pictures, called **hieroglyphics**, instead of letters. They wrote “water” like this:



The ancient Sumerians started writing with picture shapes too, but these gradually evolved into a set of signs called **cuneiform**. The Sumerians wrote “water” like this:



FACT BOX

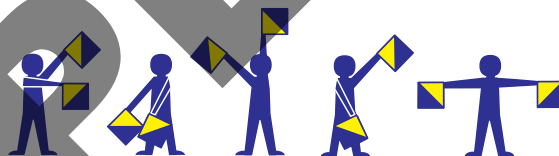
What Is a Code?

A code is a way of passing ideas or information on to other people. A code only works if the person who sends the message and the person who receives the message both understand how the code works.

Semaphore

Before the invention of radio communication, sailors used to send messages from one ship to another by using **semaphore**. By holding two flags in different positions, they could spell out all the letters of the alphabet.

This is what the word “water” looks like when it is sent by semaphore:



See page 10

Morse Code

Some codes use sounds. The most famous of these is **Morse code**, which uses two sounds: a short buzz, which is called a “dot,” and a long buzz, which is called a “dash.”

Anyone using Morse code has to learn how the dots and dashes are used to represent the different letters of the alphabet.

See page 19

When “water” is written in **Morse code**, it looks like this:

