DRAWING TO LEARN ANYTHING

No drawing skills required

Paul Carney

First published in 2021 by: Loughborough Design Press Ltd, 12 Church Hill Road, Oxford, OX4 3SE. Copyright © 2021, Paul Carney and Loughborough Design Press.

The right of Paul Carney to be identified as the author of this book has been asserted by him in accordance with the Copyright, Designs and Patents Act, 1988.

All rights reserved. Extracts from the book may be reproduced for academic purposes, otherwise written permission is required from the publisher. The book is sold subject to the condition that it shall not by way of trade or otherwise be stored in a retrieval system, re-sold, hired out or otherwise circulated except in the publisher's binding.

For information on all Loughborough Design Press publications, please visit our website: www.ldpress.co.uk

Printed by Printondemand-worldwide.com, UK

The product is FSC and PEFC certified



PEFC Certified

This product is from sustainably managed forests and controlled sources

www.pefc.org



Mixed Sources Product group from well-managed forests, and other controlled sources www.fsc.org Cert no. TT-C0C-002641 0 1996 Forest Stewardship Council

ISBN: [paperback] 978-1-909671-24-9 elSBN: [mobi] 978-1-909671-25-6

Book design: Kathy Norman Cover design: Paul Carney

ACKNOWLEDGMENTS

For all of us who think in pictures...

For all of us who doubt our idea is any good, undermine our own ability and question our worth...

I'd like to thank Paul Carney for all his hard work, effort and determination to write this book. You were wracked with self-doubt, were constantly out of your comfort zone and it felt like every word had to be checked and verified at times. You had very little support for this book, yet you perservered and got it finished.

The desire to prove that drawing is more than just a superficial, decorative skill for the gifted few, kept you going and forced you to really consider and empathise with students and teachers of other subject disciplines. I'd like to think that this book will elevate drawing's status as significant classroom tool for learning, because it should be right up there with writing.

Paul Carney

www.paulcarneyarts.com

January 2021

Dedication

This book is for all the students who find learning hard

CONTENTS

Introduction	
Chapter 1 – Everyone can draw, you just might not know it yet	13
 A drawing test Your drawing ability Identifying letter shapes around you Drawing with letters Simple drawing Drawing lines Playing with letter patterns Handwriting drawing – controlled scribbles Layout Summary How I do my drawings 	13 14 16 16 17 21 22 24 26 29 30
Chapter 2 – Memory explained	32
 Four memory types Memory for learning Memory pizzas My answers to the drawing question 	32 34 36 42
 Chapter 3 – Basic techniques of memory drawing Technique 1: Syllable Sound Association Drawing (SSAD) Vowel sounds Getting stuck Numbers Technique 2: Decorative drawing Technique 3: Meaning manipulation Spaced retrieval SSAD summary 	43 43 50 51 55 56 57 58
-	

•	Drawing for memory examples The SSAD technique in a nutshell Drawing for learning in practice And finally	59 60 61 65
Chapt	er 4 – Drawing for understanding	66
• • • •	Drawing complex text 1: Detecting dark matter Drawing complex text 2: To Kill a Mockingbird Drawing complex text 3: The Tempest Drawing to understand complex plots 1: Midsummer Night's Drea Drawing to understand complex plots 2: Henry the Fifth Using drawing to understand essay questions Narrative drawing: Drawing information without text	66 69 73 am 76 79 81 86
Chapt	er 5 – Drawing in four dimensions	91
• • •	What is four-dimensional drawing? Applying four-dimensional metacognitive drawing Drawing in four-dimensions 1: Design and Technology Drawing in four-dimensions 2: Volcano formation Drawing in four-dimensions 3: Biology	91 96 104 105 106
Chapt	er 6 – Drawing for mathematics	107
•	Drawing maths Playing with polygons String patterns Seeing geometry Flower geometry Compass geometry How to draw the Flower of Life How to draw an equilateral triangle How to draw a square	107 109 116 122 123 127 128 129 130
٠	How to draw a pentagon	131

 Creating more complex patterns from a compass 	132
Drawing patterns	133
Drawing growth patterns	136
Drawing three-dimensional shapes	140
Drawing tessellations	145
Drawing for counting	149
Number Value Font	150
Number Value Font Tens	151
Addition	152
Subtraction	153
Division	153
Multiplication	154
Drawing operations in maths	156
Summary	158
Chapter 7 – Drawing for information	160
Drawing to observe	160
Blind drawing exercise	163
Conventions of information drawing	165
Perspective drawing	168
Drawing for purpose	168
 Drawing diagrams compared to close observation 	174
 Drawing what you don't know 	176
Drawing a known unknown	178
Drawing our emotions	180
Summary	182
References	183
Author Profile	

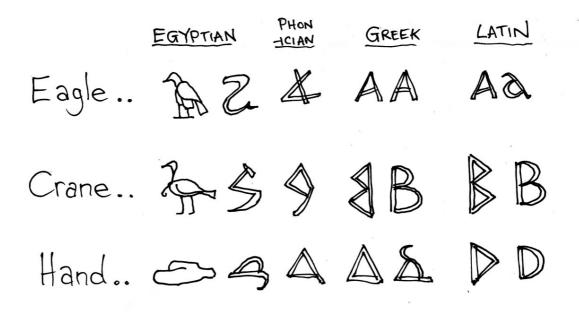
INTRODUCTION

If you can think it, you can draw it. If you can write it, you can draw it. Drawing is the manifestation of our internal thoughts. Where writing is a translation of thoughts into complex symbolic code, drawing is our thoughts visualised into pictorial imagery, a natural extension of what our brains are trying to achieve when we think.

Research by Fernandes, Wammes and Meade in 2018 assessed drawing as a learning strategy. They found that drawing information improved memory and was a very reliable way of boosting performance. Drawing enhances the learning of individual words and pictures as well as text. The learning gains they identified were greater from drawing than other known learning techniques such as reading and repeating things, writing or even copying information. Their conclusion was that drawing improves memory, and it does this because the physical act of drawing gets you to represent and describe the thoughts, images and visualisations in your mind.

The barrier to using drawing as a learning tool is that it is seen as an elitist skill for those lucky enough to have been born with natural talent. What I want to prove to you is that if you can write your name you can draw anything in this book. If you can draw a stick person you are good enough to use drawing for learning. I will not employ high level drawing skills beyond drawing the crudest, most basic of shapes or copying and tracing.

This book is going to show you how simply drawing stuff can help you learn things better. It will empower you to remember, process and understand things much more successfully. This is because drawing is a lot lot older than writing and in fact when we draw we are involving a lot more areas of our brain than if we simply write stuff down or say it. Our species have been drawing for at least a hundred thousand years, but writing is only a few thousand years old. In fact, writing originally developed from simple, symbolic drawings.



Development of writing from Hieroglyphics to Latin symbols.

Incredibly, our children still learn to draw before they can write and still develop their writing skills from their drawing skills.

This book is not an art book, nor is it a book only for artists who can already draw. It's a book designed to help you in all subjects in the school: maths, English, history, geography, languages, science and others. It is a book for people who don't think they can draw. I have taught art for decades; I know that the very mention of drawing sets many people in a panic. They feel stupid when they draw and so they don't do it because they feel embarrassed. Don't be.

This wouldn't be much of a book about learning in all subjects if it required you to draw 'brilliantly' would it? So let's measure your drawing ability to see if you can use this book successfully.

1. EVERYONE CAN DRAW

You just might not know it yet

A drawing test

Please read the instructions carefully before you begin

Time allowed: all the time in the world.

Materials required: something to draw with and something to draw on.

Examination conditions: any time, any place, anywhere. Talking allowed, laughing encouraged.

The test

Write your name in the space provided.

The test is complete. Put your drawing implement down and stare out of the window for one hour and twenty-nine minutes.

Assessing the test

• Can you read it?

Congratulations, you've passed the test. You can draw.

• Mine can't be read.

Congratulations, you're an abstract artist.

• I didn't write anything.

Congratulations, you're a conceptual artist.

• I threw mine away and refused to do it.

You're a Turner Prize candidate.

Your drawing ability

As long as you can write your name you can use drawing to help you learn. This book is NOT about drawing like this:



Winter Crow, graphite on paper by Paul Carney.

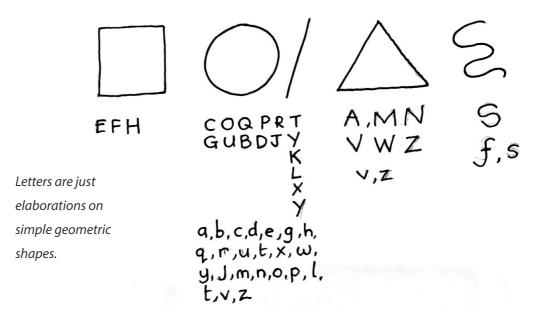
It's about drawing like this:



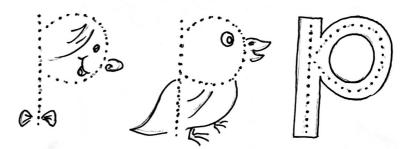
One-minute bird drawings by adults and children.

As long as you can tell what it is then it is successful. But since this book depends on you doing some simple drawing, let me give you a few basic tips.

All writing is made up of quite simple shapes.



As children, we learn how to draw shapes, then we learn how to turn the shapes into letters.



We learn to write by drawing familiar shapes.

Since all writing is made up of simple shapes such as circles, lines and triangles and we can all write, then it's safe to assume we can all draw simple shapes. So would it surprise you to learn that everything you see in the world around you is made up of those same simple shapes?

Identifying letter shapes around you

Go for a walk around your house. Look at all the things you find and try to identify the letter shapes that make them up. Don't try to draw the things you see, just look at them and think about the letter shapes you can see. If you don't see any letter shapes, then just look for basic shapes such as squares and rectangles.

- Now go out in your street and do the same thing.
- Now go where there are lots of natural things like bushes, trees, grass etc. and do the same again.
- Now look at yourself, your friends or family and do it again.
- Finally, look at pictures of animals and find the shapes they are made of.

Everything you see is composed from the same simple shapes we use everyday to write with. So if we can write our name we can draw anything.

Still not convinced? Okay, let's investigate this further.

Drawing with letters

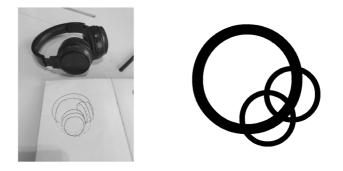
You can draw these two example pictures with letter shapes.

Objects can be constructed from simple letter shapes.



The cup can be drawn with the letters O, I and D.

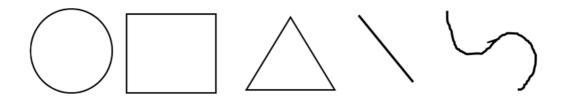
These headphones can be drawn with the letter O, ovals and circles.



Practice drawing more things with letters. Begin with simple objects then get progressively more complex.

Simple drawing

Nearly everyone draws cartoons as a kid. Then art teachers come along and tell you they aren't proper art. But I'm an art teacher and they are, so there! This style of drawing is called 'glyphic' drawing and it involves drawing things with simple outlines using simple shapes. We can build on our first lessons of drawing using letters to begin drawing using the simple shapes that letters are made up from: circles, triangles, squares and wavy lines.

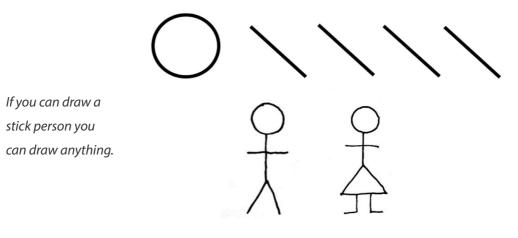


Believe it or not, but these simple shapes make up everything in the world around us. It might be difficult at first, but eventually you'll learn what the French artist Paul Cezanne said in 1896: '*Everything in nature can be reduced to the simple sphere, cone or cylinder*'.

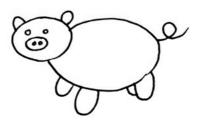
Most 'how to draw' books show you that you can draw animals and people and cars and all kinds of things with just a few simple circles, squares and lines.

Remember, in this book all you're trying to do is to draw to communicate the meaning of what it is – not to draw artistically. You can even just draw stick people if you like, so this level of drawing is perfect!

A stick person is made up of a circle and a few straight lines; what we refer to in writing as I's and O's.



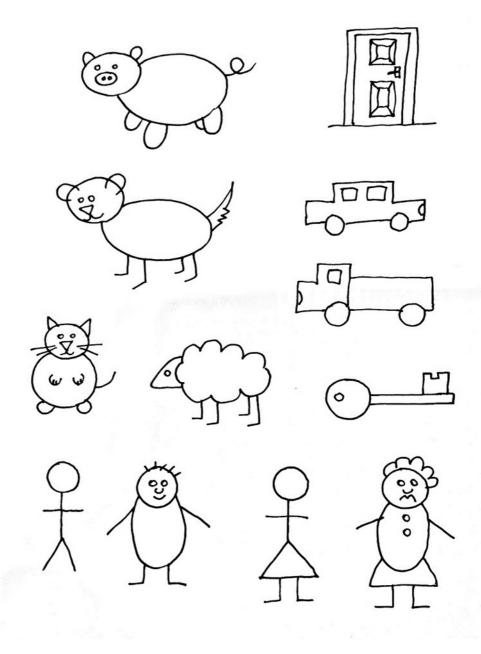
But a few circles more can create a pig!



Or a dog. Or a cow. You get the idea...

In this way, a rectangle can become a door or you can join circles and rectangles up to make cars, lorries, keys or people.

Most people can draw like this but they don't think this is 'proper' drawing, and they are so embarrassed by it they don't do it. But this IS drawing! All you will need to do these exercises is to be able to draw to the standard we have just covered. Lesson: I'd like you to copy these drawings then try to draw a few more animals or objects of your own.



Copy these simple pictures then make up some of your own.