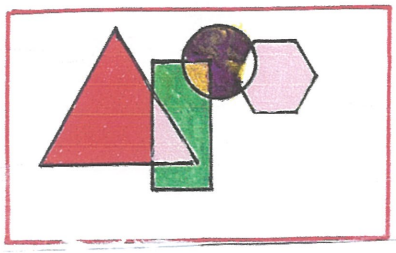
CHALLENGING BRAIN ACTIVITIES

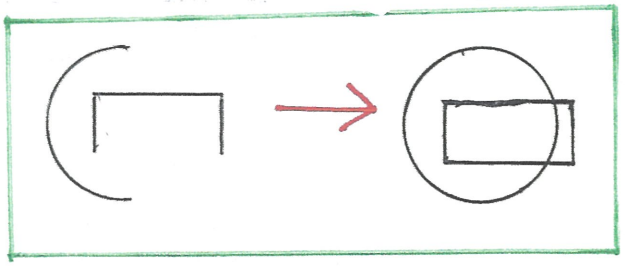
BY

GARETH ROWLANDS



$$\frac{\frac{1}{2}}{\frac{1}{4}} = 2$$

$$6+3\times4-10=8$$



EXERCISES TO COMBAT MEMORY LOSS

Contents

Introduction

Many brain exercises usually involve common, routine puzzles such as crossword puzzles, Sudoku, Scrabble and logic puzzles which,at times, resemble some form of tests. Of course, all forms of mental exercises are beneficial and are brain stimulating.

How often have we all gone to an adjoining room or upstairs to the bedroom intending to fetch an item and having reached there completely forgotten what we went there for? Sometimes we can do this more than once!

But from time to time we all suffer from some form of memory loss for many different reasons, sometimes because we are so preoccupied with so many other matters with our minds already overloaded with things to remember and do.

According to ongoing medical research, there is growing belief that both mental and physical exercises can help to prevent the onset of Alzheimer's disease and dementia because they stimulate parts of the brain dealing with memory. Mental exercises such as word, number and in particular Neurobic exercises have been known to reactivate parts of the brain that may have become dormant as they actively support the growth of new brain cells as well as promoting communications between various nerve cells involved with memory.

An active lifestyle spent in intellectually stimulating atmosphere having plenty of interesting company can compensate for some forms of memory loss associated with Alzheimer's disease and dementia whilst reading, reading aloud, singing, learning a new skill, playing Sudoku and Scrabble, playing or learning to play a musical instrument or attempting any form of puzzles such as crossword puzzles which are in themselves magnificent ways of stimulating the brain. Any mental or physical exercise which stimulates the brain is much preferred to just sitting watching television when in most cases the brain is sent into a neutral and passive state and this pastime is unfortunately devoid of any real thinking.

Many of the exercises in this resource have been used successfully by individuals in their own homes, at coffee mornings, in workshops held in residential and nursing care homes, in pharmaceutical company seminars and at many other gatherings.

This book is intended as a resource for the general reader and in particular people who wish to improve and protect their brain fitness in order to try to guard against serious memory Loss. People in all sectors of life are becoming more aware of the growing number of people living with Alzheimer's disease and dementia and are turning to suitable and stimulating exercises in an attempt to combat the onset of the disease.

The Alzheimer's Society here in the UK and The Alzheimer's Disease International (ADI) is working globally to focus on all forms of memory loss, encouraging people in all communities here in the UK and abroad to become more aware of memory loss and its impact on individuals and their families and the importance of physical and mental exercises

for all.

There are about 860 000 people in the Unite Kingdom living with dementia and the number is forecast to increase to one million by the year 2025. Participating regularly in mental exercises that challenge reasoning and memory skills (brain workouts) could have significant benefits for older people in the their day to day lives.

To attempt to avoid the onset of any form of memory loss it is vital to keep the brain strong and healthy. This can be achieved by attempting brain exercises for a period of about fifteen minutes daily. The exercises in this book are written for this purpose and can be adapted and attempted individually, in pairs, in groups or within families. This is the main objective of this book. The exercises are designed to help preserve and improve memory by using letters, words, sentences, numbers and shapes.

According to medical research, attempting brain exercises for short periods of time each day may well prevent memory loss and at the same time increase mental fitness. The book is a useful resource for people who recognise the importance of preserving and enhancing the brain's capabilities into old age.

Owners of residential and nursing care homes recognise the need to involve their residents in daily physical and mental activities. This includes encouraging residents to be actively involved in mental exercises similar to those described in this book.

Being aware that thousands of people in the United Kingdom live with some form of memory loss it is vital that adequate resources are made available to try to stop this number increasing. It is hoped that this book will help in some real way to do this.

'Prevention is better than cure' and with respect to the brain,

'If you don't use it , you lose it'.

So 'Let's not forget to remember' and 'Let's remember not to forget'

How to use this resource

This resource is made up of a variety of different exercises divided up into chapters with headings. Most of the exercises are graded starting with easy questions leading on to more difficult ones.

When using this resource, it is suggested that one or two exercises are selected from different chapters to give a variety of challenges. For example, especially during the initial stages, the reader can choose a couple of exercises from the chapter on 'Words', followed by a couple of exercises from the chapter on 'Number' ending finally with a couple of exercises from the chapter on 'Shapes'. The reader will of course be able to select questions from different exercises in different chapters to suit their own needs and abilities.

It is suggested that carers using this resource at home, in residential and nursing care homes

and elsewhere will be able to select questions for their residents to suit the circumstances at the time. The exercises can be attempted individually, in pairs, in groups or as a family.

The exercises are designed to attempt at stimulating of the brain to improve memory whilst at the same time providing a source of fun and entertainment in the process.

Paper and pen or pencil are needed for all questions in Chapter 5 and some of the questions in Chapter 21 (Exercise 14 to 23) in order to make freehand sketches of diagrams.

Dedication

This resource is dedicated to people of all ages, young and old, who wish to battle and combat against any form of memory loss.

Disclaimer

The information provided in this book is designed to provide helpful information for the purpose of helping prevent memory loss and increase mental fitness.

The book is not meant to be used nor should it be used to diagnose or treat any medical condition, mental or physical. For diagnosis or treatment of any medical or physical problem one is advised to consult one's own General Practitioner immediately.

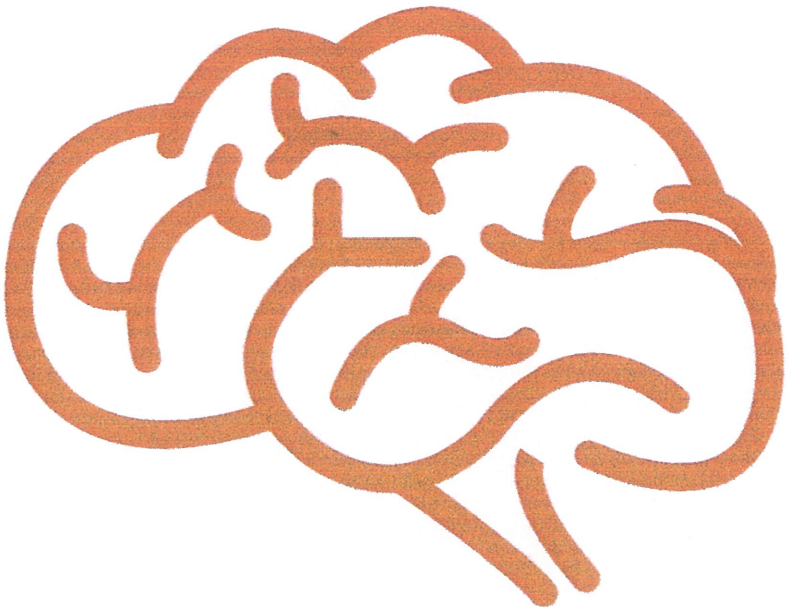
Neither the author nor the publisher of this book will be held responsible for any injury, loss or damage caused in any manner whatsoever by attempting any of the exercises in this book.

As with any exercise programme one should be aware of one's own physical and mental limitations, and if one has any concerns one should consult a qualified health care professional for advice with immediate effect.

This book is not to be taken as a substitute for the medical advise of a qualified physician.

Gareth Rowlands

Neurobic Exercise Guide



Compiled by Gareth Rowlands

Hello!

Welcome to your neurobic exercise guide!

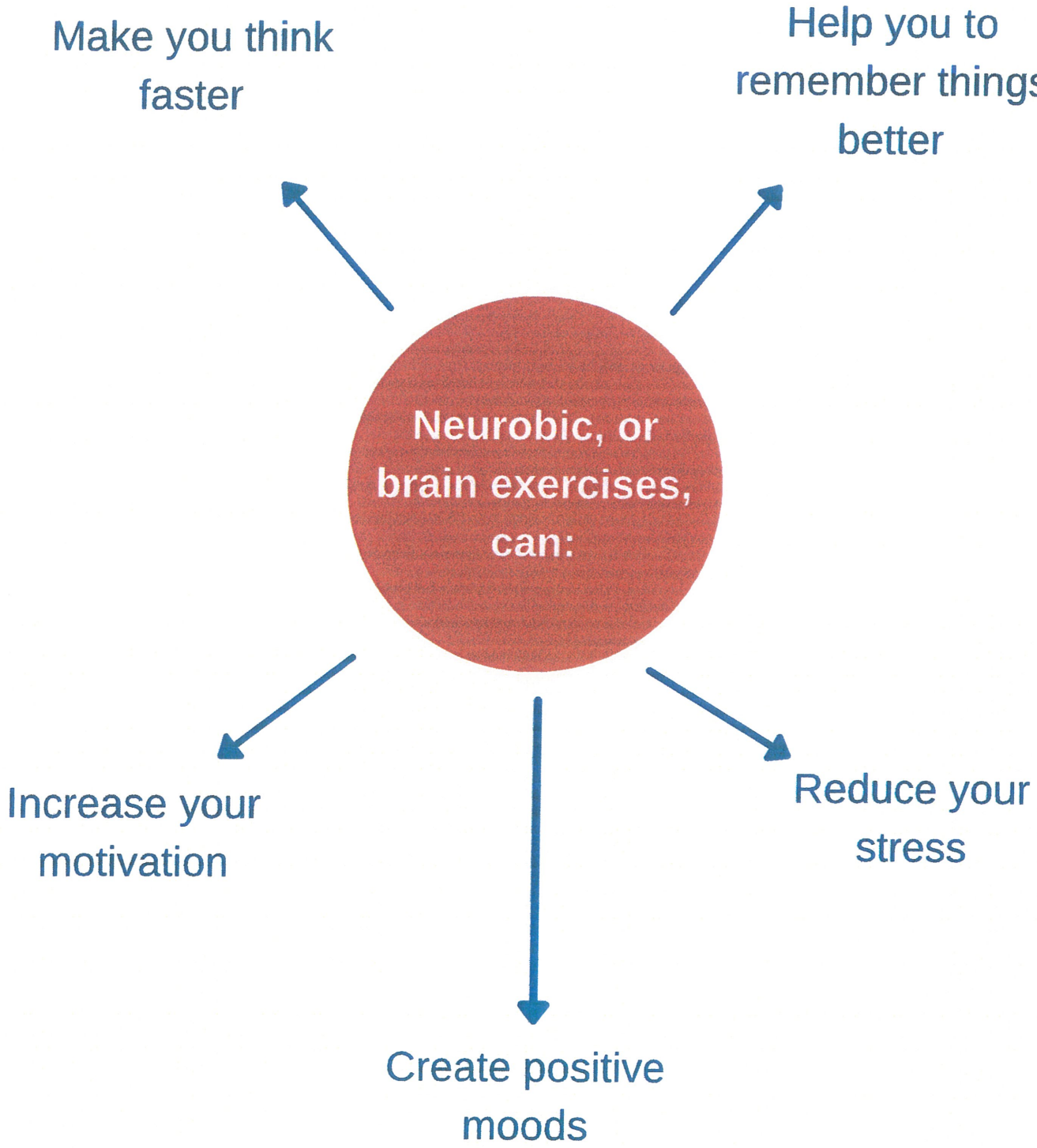
All you need is a pen and paper and you are on your way!

The contents of this guide on neurobic exercises have been provided by Gareth Rowlands, a campaigner for people living with memory loss. A resource booklet *'Our Brain Matters'* can be found on the opening page of his web site www.battledementia.co.uk. If you would like to practice more similar exercises to this guide, please visit his website.

His resource *'Our Brain Matters'* is made up of a variety of different neurobic exercises, divided into chapters. Most of the exercises are graded starting with easy exercises leading on to more difficult ones.

It is suggested that carers using his resource at home, in residential care and nursing homes and elsewhere will be able to select exercises for their residents to suit their circumstances at the time. The exercise can be attempted by themselves, in pairs or in groups as a family.

Benefits of neurobic exercises



NOTE:

For best results, neurobic exercises should be attempted for 10-15 minutes daily.

Writing exercises

Guide on how to do these exercises

If you're right handed:

L = Unusual hand

R = Usual hand

If you're left handed:

L = Usual hand

R = Unusual hand

Writing Exercises

You can make up your own exercises like the below using different names, letters, shapes and numbers.

Exercise 1:

- Write down your first name with your usual hand.
- Write down your name with your unusual hand.
- Write down your name backwards with your usual hand.
- Write down your name backwards with your unusual hand.

Exercise 2:

- Make a rough sketch of this letter with your usual hand.
- Make a rough sketch of the letter with your unusual hand.

Exercise 3:

- Write down this number with your usual hand.
- Write down the number with your unusual hand.
- Write down the number backwards with your usual hand.
- Write down the number backwards with your unusual hand.

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Day-to-day exercises

Just as too much sitting is bad for the body, too much day-in, day-out routine is bad for the brain. The brain needs to be stimulated constantly.

Try these routine tasks using your non dominant hand and bring your brain alive:

- Brushing your teeth
- Opening the toothpaste tube
- Combing or brushing your hair
- Using a spoon at breakfast time
- Dialing a number
- Using the computer mouse
- Typing on your computer keyboard

With your eyes closed try using your unusual hand to:

- Dressing and buttoning or zipping up
- Washing your face
- Carefully opening and shutting doors and containers;

To tax your brain:

- Turn your calandar upside down
- Wear your watch upside down on your unusual wrist
- Read a newspaper ite when it is upside down
- Turn family photos upside down and display in another room

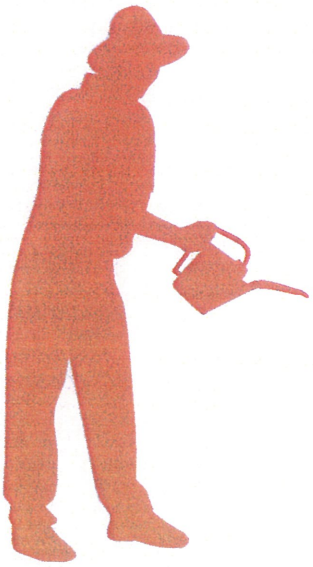
Day-to-day exercises

When you are really energetic, use your non dominant hand to:

- Throw a ball into a basket or bucket. Repeat 10 times
- Throw a ball up and catch it. Repeat 10 times.
- Bounce a ball five to ten times.
- Roll a ball into the corner of the room. Rpeat 10 times.

Exercises involving tasks using two or more of the five senses (sight, hearing, smell, taste and touch):

- Dancing to recorded or live music - turn up that radio!
- Singing whilst drawing or painting a picture
- Singing whilst doing a task such as housework or gardening
- Watching the clouds go by whilst creating a shape with modelling clay
- Drawing a picture, singing in a room with a lovely smell of lavender



Chapter 1

Letters and words

Our brain is an organ that improves through mental stimulation and it continuously adapts, grows and 'rewires' itself through the growth of new neurons.

As we age, it is quite common for us to experience some form of memory loss and quite often this is because of lack of brain exercises. If we don't use our brain it looses its knowledge.

Research has found that by using your non dominant **hand** the neural connections in the brain are strengthened along with the growth of new neurons. It is similar in a way to how physical exercises improves body functions and results in the growth of muscles.

When you attempt the exercises in this chapter you will be using your **dominant** hand and your **non dominant** hand to write letters and words.

You will also be trying to write letters and words backwards with your **dominant** and **non dominant** hand.

To do these exercises you will need paper and pen or pencil.

Remember, if you are **right handed** your **dominant hand** is your **right hand** and your **non dominant hand** is your **left hand**.

Also, if you are **left handed** your **dominant hand** is your **left hand** and your **non dominant hand** is your **right hand**.

Exercise 1

Write down the letter **a** with your dominant hand.

Now write down the letter **a** with your non dominant hand.

Repeat the same exercise with all the other letters of the alphabet:

b c d e f g h i j k l m n o p q r s t u v w x y z

Exercise 2

Write down the two lettered word **am** with your dominant hand.

Now write down the word **am** backwards with your dominant hand.

Now write down the word **am** with your non dominant hand.

Now write down the word **am** backwards with your non dominant hand.

Repeat the same exercise with these two lettered words:

at by is me or up we my am

Exercise 3

Write down the three lettered word **pal** with your dominant hand.

Now write down the word **pal** backwards with your dominant hand.

Now write down the word **pal** with your non dominant hand.

Now write down the word **pal** backwards with your non dominant hand.

Repeat the same exercise with these three lettered words:

and for are but can her his old way

Exercise 4

Write down the four lettered word **warm** with your dominant hand.

Now write down the word **warm** backwards with your dominant hand.

Now write down the word **warm** with your non dominant hand.

Now write down the word **warm** backwards with your non dominant hand.

Repeat the exercise with these four lettered words:

able area belt farm game room salt shop wife

Exercise 5

Write down the five lettered word **jokes** with your dominant hand.

Now write down the word **jokes** backwards with your dominant hand.

Now write down the word **jokes** with your non dominant hand.

Now write the word **jokes** backwards with your non dominant hand.

Repeat the exercise with these five lettered word:

actor after baked drape early fined fever wards windy

Exercise 6

Write down the six lettered word **admire** with your dominant hand.

Now write down the word **admire** backwards with your dominant hand.

Now write down the word **admire** with your non dominant hand.

Now write down the word **admire** backwards with your non dominant hand.

Repeat the exercise with these six lettered words:

agenda beauty boiler calves abroad length master people pretty

Exercise 7

Write down the seven lettered word **abandon** with your dominant hand.

Now write down the word **abandon** backwards with your dominant hand.

Now write down the word **abandon** with your non dominant hand.

Now write down the word **abandon** with your non dominant hand.

Repeat the exercise with these seven lettered words:

advised balance bedroom caravan chuckle cinemas diaries duchess elegant

Exercise 8

Write down the eight lettered word **addition** with your dominant hand.

Now write down the word **addition** backwards with your dominant hand.

Now write down the word **addition** with your non dominant hand.

Now write down the word **addition** backwards with your non dominant hand.

Repeat the exercise with these eight lettered words:

anything children district increase possible religion students together standard

Exercise 9

Write down the nine lettered word **chocolate** using your dominant hand.

Now write down the word **chocolate** backwards with your dominant hand.

Now write down the word **chocolate** with your non dominant hand.

Now write down the word **chocolate** backward with your non dominant hand.

Repeat the exercise with these nine lettered words:

Christmas celebrate dangerous something affection community ambulance wonderful blessings

Exercise 10

Write down the ten lettered word **everything** with your dominant hand.

Now write down the word **everything** backwards with your dominant hand.

Now write down the word **everything** with your non dominant hand.

Now write down the word everything backwards with your non dominant hand.

Repeat the exercise with these ten lettered words:

appreciate friendship confidence restaurant understand university Cinderella generation helicopter

Chapter 2

Names

Exercise 1

Write down your **first name** with your dominant hand.

Now write down your **first name** backwards with your dominant hand.

Now write down your **first name** with your non dominant hand.

Now write down your **first name** backwards with your non dominant hand.

Exercise 2

Repeat the above exercise with these names:

Tom David Matthew Christopher Jennifer Judith Sally Maureen Elizabeth

Exercise 3

Write down your **first name** and **surname** with your dominant hand.

Now write down your **first name** and **surname** backwards with your dominant hand.

Now write down your **first name** and **surname** with your non dominant hand.

Now write down your **first name** and **surname** backwards with your non dominant hand.

Exercise 4

Repeat the above exercise with these **first names** and **surnames**:

John Jones William Evans Michael Ball Robert Williams Maureen Davies

Jennifer James Rose Golding Judith Roberts Helen Sandford

Exercise 5

Write down the name **London** with your dominant hand.

Now write down the name **London** backwards with your dominant hand.

Now write down the name **London** with your non dominant hand.

Now write down the word **London** backwards with your non dominant hand.

Exercise 6

Repeat the above exercise with these names of towns and cities:

Belfast Cardiff Newcastle Edinburgh Dublin Southend Colchester Plymouth Exeter

Exercise 7

Write down the name **Jakarta** with your dominant hand.

Now write down the name **Jakarta** backwards with your dominant hand.

Now write down the name **Jakarta** with your non dominant hand.

Now write down the name **Jakarta** backwards with your non dominant hand.

Exercise 8

Repeat the above exercise with these names of Capital towns and cities:

Accra Brussels Cairo Monaco Nicosia Moscow Prague Madrid Tokyo

Exercise 9

Write down the name **England** with your dominant hand.

Now write down the name **England** backwards with your dominant hand.

Now write down the name **England** with your non dominant hand.

Now write down the name **England** backwards with your non dominant hand.

Exercise 10

Repeat the above exercise with these names of countries:

Wales Ireland Scotland France Germany Sweden Finland Russia India

Exercise 11

Write down the word **Monday** with your dominant hand.

Now write down the word **Monday** backwards with your dominant hand

Now write down the word **Monday** with your non dominant hand.

Now write down the word **Monday** backwards with your non dominant hand.

Exercise 12

Repeat the above exercise with these names of days of the week:

Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

Exercise 13

Write down the word **January** with your dominant hand.

Now write down the word **January** backwards with your dominant hand.

Now write down the word **January** with your non dominant hand.

Now write down the word **January** backwards with your non dominant hand.

Exercise 14

Repeat the above exercise with the names of these months of the year:

February March April May June July August September October November December

Exercise 15

Write down the letters **a b c d** with your dominant hand.

Now write down the letters **a b c d** backwards with your dominant hand

Now write down the letters **a b c d** with your non dominant hand.

Now write down the letters **a b c d** backwards with your non dominant hand.

Repeat the above exercise using these letters:

e f g h

i j k l

m n o p

q r s t

u v w x y z

Chapter 3

Sentences

Three word sentences

Exercise 1

Write down the sentence **We are happy** with your dominant hand.

Now write down the sentence **We are happy** backwards with your dominant hand.

Now write down the sentence **We are happy** with your non dominant hand.

Now write down the sentence **We are happy** backwards with your non dominant hand.

Repeat the above exercises with these three word sentences:

In a moment.

I will sing.

Write it down.

Today is sunny

Let us pray.

I am home.

This is good.

Time to sleep.

I am hungry.

It is warm.

Four word sentences

Exercise 2

Write down the sentence **It is cold today** with your dominant hand.

Now write down the sentence **It is cold today** backwards with your dominant hand.

Now write down the sentence **It is cold today** with your non dominant hand.

Now write down the sentence **It is cold today** backwards with your non dominant hand.

Repeat the above exercise with these four word sentences:

I will be happy.

We will remember them.

They are very tired.

I will eat it.

I am happy here.

The music is good.

The food is tasty.

Tomorrow I will dance.

There is room here.

My brother is young.

Five word sentences

Exercise 3

Write down the sentence **My son is five today** with your dominant hand.

Now write down the sentence **My son is five today** backwards with your dominant hand.

Now write down the sentence **My son is five today** with your non dominant hand.

Now write down the sentence **My son is five today** backwards with your non dominant hand.

Repeat the above exercise with these five word sentences:

Time is on my side.

I am very happy today.

The people here are nice.

Monday is my favourite day.

We can laugh it off.

I will sleep well tonight.

The food here is tasty.

I can run fast now.

I will play darts tonight.

My sister is coming home.

Exercise 4

Six word sentences

Write down the sentence **The puppy is full of fun** with your dominant hand.

Now write the sentence **The puppy is full of fun** backwards with your dominant hand.

Now write the sentence **The puppy is full of fun** with your non dominant hand.

Now write the sentence **The puppy is full of fun** backwards with your non dominant hand.

Repeat the above exercise with these six word sentences:

I will sing my song tonight.

He will finish reading his book.

The poem I recited was funny.

Every cloud has a silver lining.

A stitch in time saves nine.

Today, John scored two good goals.

My brother saw his sister yesterday.

The car was driven too fast.

There are eggs in the nest.

The shop sold fruit and vegetables.

Chapter 4

Numbers

Numbers 1 to 20

Exercise 1

Write down the number **1** with your dominant hand.

Now write down the number **1** with your non dominant hand.

Repeat the above exercise with the numbers 2, 3, 4, 5, 6, 7, 8 and 9.

Exercise 2

Write down the number **10** with your dominant hand.

Now write down the number **10** backwards with your dominant hand.

Now write down the number **10** with your non dominant hand.

Now write down the number **10** backwards with your non dominant hand.

Repeat the above exercise using the numbers 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20.

Numbers 21 to 30

Exercise 3

Write down the number **21** with your dominant hand.

Now write down the number **21** backwards with your dominant hand.

Now write down the number **21** with your non dominant hand.

Now write down the number **21** backwards with your non dominant hand.

Repeat the above exercise using the numbers 22, 23, 24, 25, 26, 27, 28, 29 and 30.

Numbers 31 to 40

Exercise 4

Write down the number **31** with your dominant hand.

Now write down the number **31** backwards with your dominant hand.

Now write down the number **31** with your non dominant hand.

Now write down the number **31** backwards with your non dominant hand.

Repeat the above exercise using the numbers 32, 33, 34, 35, 36, 37, 38, 39 and 40.

Numbers 41 to 50

Exercise 5

Write down the number **41** with your dominant hand.

Now write down the number **41** backwards with your dominant hand.

Now write down the number **41** with your non dominant hand.

Now write down the number **41** backwards with your non dominant hand.

Repeat the above exercise using the numbers 42, 43, 44, 45, 46, 47, 48, 49 and 50.

Numbers 51 to 60

Exercise 6

Write down the number **51** with your dominant hand.

Now write down the number **51** backwards with your dominant hand.

Now write down the number **51** with your non dominant hand.

Now write down the number **51** backwards with your non dominant hand.

Repeat the above exercise using the numbers 52, 53, 54, 55, 56, 57, 58, 59 and 60.

Numbers 61 to 70

Exercise 7

Write down the number **61** with your dominant hand.

Now write down the number **61** backwards with your dominant hand.

Now write down the number **61** with your non dominant hand.

Now write down the number **61** backwards with your non dominant hand.

Repeat the above exercise using the numbers 62, 63, 64, 65, 66, 67, 68, 69 and 70.

Numbers 71 to 80

Exercise 8

Write down the number **71** with your dominant hand.

Now write down the number **71** backwards with your dominant hand.

Now write down the number **71** with your non dominant hand.

Now write down the number **71** backwards with your non dominant hand.

Repeat the above exercise using the numbers 72, 73, 74, 75, 76, 77, 78, 79 and 80.

Numbers 81 to 90

Exercise 9

Write down the number **81** with your dominant hand.

Now write down the number **81** backwards with your dominant hand.

Now write down the number **81** with your non dominant hand.

Now write down the number **81** backwards with your non dominant hand.

Repeat the above exercise with the numbers 82, 83, 84, 85, 86, 87, 88, 89 and 90.

Numbers 91 to 100

Exercise 10

Write down the number **91** with your dominant hand.

Now write down the number **91** backwards with your dominant hand.

Now write down the number **91** with your non dominant hand.

Now write down the number **91** backwards with your non dominant hand.

Repeat the above exercise using the numbers 92, 93, 94, 95, 96, 97, 98, 99 and 100.

Some numbers from 101 to 200

Exercise 11

Write down the number **101** with your dominant hand

Now write down the number **101** backwards with your dominant hand.

Now write down the number **101** with your non dominant hand.

Now write down the number **101** backwards with your non dominant hand

Repeat the above exercise using the numbers 123, 134, 146, 159, 163, 178, 182, 197 and 200.

Some numbers from 201 to 300

Exercise 12

Write down the number **201** with your dominant hand.

Now write down the number **201** backwards with your dominant hand.

Now write down the number **201** with your non dominant hand.

Now write down the number **201** backwards with your non dominant hand.

Repeat the above exercise using the numbers 216, 227, 239, 246, 257, 269, 274, 285, 292 and 300.

Some numbers from 301 to 400

Exercise 13

Write down the number **301** using your dominant hand.

Now write down the number **301** backwards using your dominant hand.

Now write down the number **301** with your non dominant hand.

Now write down the number 301 backwards with your non dominant hand.

Repeat the above exercise using the numbers 315, 328, 332, 349, 357, 367, 372, 386, 397 and 400

Some numbers from 401 to 500

Exercise 14

Write down the number **401** with your dominant hand.

Now write down the number **401** backwards with your dominant hand.

Now write down the number **401** with your non dominant hand.

Now write down the number **401** backwards with your non dominant hand.

Repeat the above exercise using the numbers 418, 429, 432, 447, 459, 465, 476, 483, 495 and 500.

Some numbers from 501 to 600

Exercise 15

Write down the number **501** with your dominant hand.

Now write down the number **501** backwards with your dominant hand.

Now write down the number **501** with your non dominant hand.

Now write down the number **501** with your non dominant hand.

Repeat the above exercise using the number 518, 526, 539, 547, 552, 569, 574, 586, 597 and 600

Some numbers from 601 to 700

Exercise 16

Write down the number **601** with your dominant hand.

Now write down the number **601** backwards with your dominant hand.

Now write down the number **601** with your non dominant hand.

Now write down the number **601** backwards with your non dominant hand.

Repeat the above exercise using the numbers 613, 624, 639, 647, 658, 663, 672, 681, 695 and 700.

Some numbers from 701 to 800

Exercise 17

Write down the number **701** with your dominant hand.

Now write down the number **701** backwards with your dominant hand.

Now write down the number **701** with your non dominant hand.

Now write down the number **701** backwards with your non dominant hand.

Repeat the above exercise using the numbers 714, 729, 735, 746, 752, 768, 774, 783, 796 and 800.

Some numbers from 801 to 900

Exercise 18

Write down the number **801** with your dominant hand.

Now write down the number **801** backwards with your dominant hand.

Now write down the number **801** with your non dominant hand

Now write down the number **801** backwards with your non dominant hand.

Repeat the above exercise using the numbers 813, 827, 836, 843, 859, 867, 871, 883, 895 and 900.

Some numbers from 900 to 1 000

Exercise 19

Write down the number **901** with your dominant hand.

Now write down the number **901** backwards with your dominant hand.

Now write down the number **901** with your non dominant hand.

Now write down the number **901** backwards with your non dominant hand.

Repeat the above exercise using the numbers 912, 927, 936, 945, 958, 963, 972, 989, 992 and 1 000.

Some numbers between 1 000 and 10 000

Exercise 20

Write down the number **1 159** with your dominant hand.

Now write down the number **1 159** backwards with your dominant hand.

Now write down the number **1 159** with your non dominant hand.

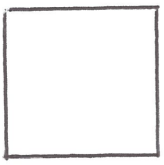
Now write down the number **1 159** backwards with your non dominant hand.

Repeat the above exercise using the numbers 1 258, 2 763, 3 849, 4 187, 5 762, 6 984, 7 439, 8 765 and 9 173.

Chapter 5

Drawing shapes

Exercise1

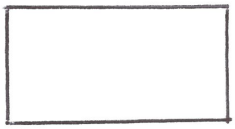


Use your dominant hand to draw the square

Now use your non dominant hand to draw the square

Repeat the above exercise with these shapes:

Exercise 2



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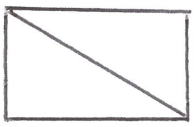

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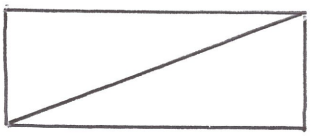

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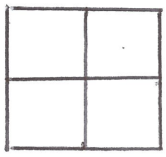

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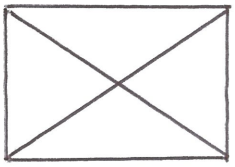

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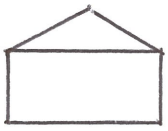

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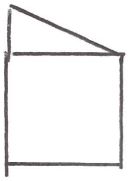
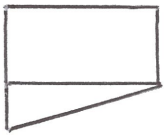


Exercise 9

Exercise 10



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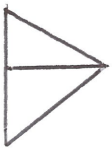

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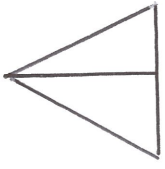

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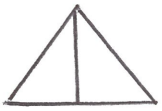

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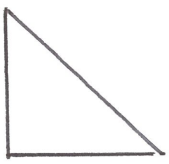
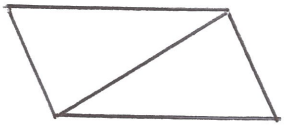


Exercise 15

Exercise 16



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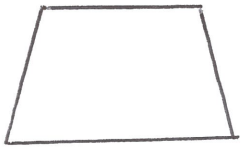

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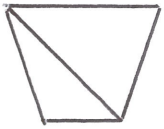

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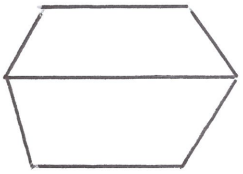

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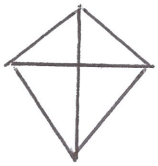

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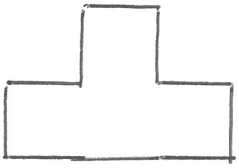

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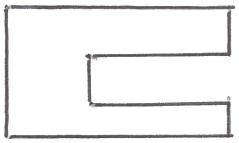

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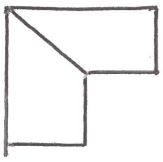

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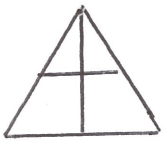
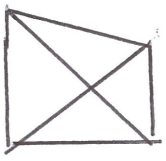


Exercise 25



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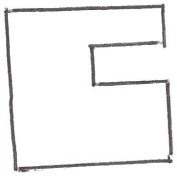
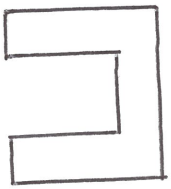
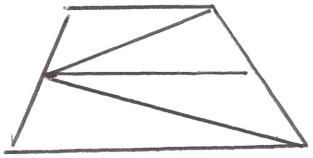


Exercise 27



Exercise 28



Chapter 6

Making up codes with numbers and letters

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Matching letters with numbers using the above list:

Examples

MY 13, 25

HIS 8, 9, 19

JUMP 10, 21, 13, 16

HELLO 8, 5, 12, 12, 15

MORNING 13, 15, 18, 14, 9, 14, 7

Matching numbers with letters using the above list:

Examples

20, 15 TO

8, 5, 18 HER

13, 1, 11, 5 MAKE

8, 5, 18, 15 HERO

20, 15, 14, 9, 7, 8, 20 TONIGHT

Exercise 1

Now try matching these words with numbers:

NO HOW LOVE THROW EATING

Exercise 2

Now try matching these numbers with words:

25, 5, 19 20, 18, 1, 9, 14 18, 1, 9, 14, 2, 15, 23 12, 9, 7, 8, 20, 14, 9, 14, 7

Example

These four numbers from the list match letters that form a word **spelt backwards**!

12, 12, 5, 20

What is the word written properly?

12, 12, 5, 20 **LLET** This is **TELL** written backwards! The word is **TELL.**

Exercise 3

These numbers match letters from the list to form words **spelt backwards** just like the one in the above example:

Try to find the words written properly instead of backwards using the letters and number list.

23, 15, 18, 8, 20

16, 12, 5, 8

5, 2, 25, 1, 13

8, 3, 20, 1, 3

23, 15, 18, 18, 15, 13, 15, 20

25, 18, 18, 1, 3

4, 14, 5, 9, 18, 6

25, 16, 6, 1, 8

18, 21, 15, 12, 15, 3

8, 19, 1, 18, 4

25, 14, 14, 21, 6

Two words are formed using the letter and number list but the words are **spelt backwards**.

What are the two words written properly instead of backwards?

Example

4, 15, 15, 7 **25, 1, 4**

D O O G Y A D The answer is **GOOD DAY**

Exercise 4

In the same way, work out the words for the numbers in these exercises:

25, 16, 16, 1, 8 25, 1, 4, 8, 20, 18, 9, 2

14, 5, 23, 25, 5, 1, 18

15, 12, 4 13, 1, 14

8, 15, 12, 4 20, 9, 7, 8, 20

7, 5, 20 20, 15, 7, 5, 20, 8, 5, 18

18, 15, 12, 12 15, 22, 5, 18

16, 1, 25 15, 6, 6

Example

Use the number and word list shown at the start of this chapter to write these words as numbers:

LET LIVE 12, 5, 20 12, 9, 22, 5

Now try these:

Exercise 5

STAND UP

SIT DOWN

AIM STRAIGHT

ARMS LENGTH

CHRISTMAS DAY

MAY DAY

WRITE OFF

GAIN ACCESS

JUMP DOWN

CLIMB UP

Exercise 6

Use the number and letter list to write these words as numbers:

HOW ARE YOU

TIME TO GO

LETS TAKE OFF

NOW OR NEVER

HAND IN HAND

IN SEARCH OF

WATER THE GARDEN

PLAY THE GAME

FORGET ME NOT

TIE THE KNOT

Exercise 7

Write words using these numbers. The numbers spell the words **backwards**.

8, 7, 21, 1, 12 9, 20 15, 6, 6

7, 5, 20 9, 20 18, 9, 7, 8, 20

3, 8, 1, 14, 7, 5 20, 8, 5 18, 9, 7, 8, 20

3, 8, 1, 14, 7, 5 20, 8, 5 28, 21, 14, 5

Exercise 8

Using the word and number list write numbers for these words:

MONDAY JANUARY

TUESDAY FEBRUARY

WEDNESDAY MARCH

THURSDAY APRIL

FRIDAY MAY

SATURDAY JUNE

SUNDAY JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

ENGLAND WALES IRELAND SCOTLAND

FOOTBALL CRICKET GOLF TENNIS HOCKEY RUGBY

AFRICA ASIA CARIBBEAN MIDDLE EAST FAR EAST

Chapter 7

Making words

Make 10 words using the letters in the word **abate**

Answers:

at be ate eat tea bat bate beat abate tab

See how many words you can make from the letters in these words:

abeam abet abide abode about abrupt absent abuse accent achieve actor adapt addition admiral affair afraid against ailment airborne airfield airship algebra alight alligator almanac always ambition ambush amnesty amount anagram angel answer aplomb appear appraise apricot arable archery arrears aside assembly astride athletic attend

Exercise 2

Make 4 words using the letters in the word ***bean***

Answers:

bean be an ban nab

See how many words you can make from the letters in these words:

brown bear brain bread bottle broad bridge bricks blame battle beauty before bacon

Exercise 3

Make 18 words using the letters in the word **carpet**

Answers:

car pet tap pat tea eat reap rate tear part pear pace
tar rat cat ace ape trace

See how many words can you make using the letters in these words:

clear close crash crowd calendar cloud copper child cinema chamber chase

clean clarify clothes cold cream crate create

Exercise 4

Make 5 words using the letters in the word **daily**

Answers:

day lid lay ail lady

See how many words you can make using the letters in these words:

Dinner dither donor double drain dribble dwarf during dungeon

Exercise 5

Make 10 words using the letters in the word ***earth.***

Answers:

at he the eat tea art tear rat tar heart

See how many words you can make using the letters in these words?

engine entail entrust event example exhibit eyelid evacuate entire

Exercise 6

Make 9 words using the letters in the word *forage* ?

Answers:

for or far rag gear rage age fear are

See how many words you can make using the letters in these words:

fortune found forbid florist flounder fodder flounce farmer female

Exercise 7

Make 8 words using the letters in the word *gadget* ?

Answers:

gadget at tea ate get gad date gate gag

Se how many words you cam make using the letters in these words?

.

great glow gear grant grow garment garden gender grain

Exercise 8

Make 9 words using the letters in the word *house* ?

Answers:

house he us she use sue hose shoe sou oh

See how many words you can make from the letters in these words ?

harvest habit heart heat history heat here hover heaven hurting hundred

Exercise 9

Make 7 words using the letters in the word *inside* ?

Answers:

inside in is sin side din den sine

See how many words you can make using the letters in these words?

Illegal ignorant inert incur indent illness imagine ignore itself

Exercise 10

Make 7 words using the letters in the word *jacket* ?

Answers:

jacket at tea eat cat take jet tack

See how many words you can make using the letters in these words:

jungle jigsaw justice junket jackpot jostle jasmine jaunt

Exercise 11

Make 9 words using the letters in the word *kinder ?*

Answers:

in din dire ride die ire den dine rind

See how many words you can make using the letters in these words?

kindle kite kiln kosher karate knight kitchen

Exercise 12

Make 4 letters using the letters in the word *lover ?*

Answers:

love over rove vole

See how many words you can make using the letters in these words:

listen latest lemon lesson lament list learning lifted

Exercise 13

Make 20 words using the letters in the word *machine ?*

Answers:

ma me in ace him he can ham chime mine men
name main niche ache acne nice cinema mace came

See how many words you can make using the letters in these words:

magnet memory moment mouse mumps monkey misfire miser middle

Exercise 14

Make 6 words using the letters in the word *nose ?*

Answers:

one so on son ones no

See how many words you can make using the letters in these words:

name noble nappy near night neat never note

Exercise 15

Make 2 words using the letters in the word *obey ?*

Answers:

obey be boy

See how many words you can make using the letters in these words?

other offend order organ office older orange opinion open

Exercise 16

Make 10 words using the letters in the word *plate ?*

Answers:

pat late let tale pate eat tea ate ale lea

See how many words you can make using the letters in these words?

pray prince police petal preach

Exercise 17

Make 3 words using the letters in the word *quiet?*

Answers:

quit tie it

See how many words you can make using the letters in these words?

quarter quaint quality quibble

Exercise 18

Make 3 words using the letters in the word *ring ?*

Answers:

gin rig grin

See how many words you can make using the letters in words:

robot rowing rabbit robin raisin rainbow robust rocket rugby ribbon

Exercise 19

Make 3 words using the letters in the word *slow ?*

Answers:

low owl sow

See how many words can you make using the letters in these words:

seat swear string swallow star

Exercise 20

Make 8 words using the letters in the word *table* ?

Answers:

able be at lea ale bate tab lab

See how many words you can make using the letters in these words:

under umpire window waste wear welcome weather water willing whistle wealth yard yellow yeast yacht yawn zeal zigzag

Chapter 8

Making words from letters

Exercise 1

Make 12 words using these letters:

n t a r i

Exercise 2

Make 3 words using these letters:

t r a s

Exercise 3

Make 7 words using these letters:

l c n o w

Exercise 4

Make 10 words using these letters:

s h u o e

Exercise 5

Make 4 words using these letters:

d c l o

Exercise 6

Make 17 words using these letters:

k e a m r t

Exercise 7

Make 6 words using these letters:

o y a t d

Exercise 8

Make 9 words using these letters:

r g a g e a

Exercise 9

Make 3 words using these letters:

s e h e p

Exercise 10

Make 11 words using these letters:

r c t a o r

Exercise 11

Make 9 words using these letters:

o m s u e

Exercise 12

Make 10 words using these letters:

b e o l w

Exercise 13

Make 12 words using these letters:

m c e a l

Exercise 14

Make 8 words using these letters:

h i c r a

Exercise 15

Make 14 words using these letters:

t e h r a

Exercise 16

Make 16 words using these letters:

h a c l p e

Exercise 17

Make 15 words using these letters:

d a g r n e

Exercise 18

Make 16 words using these letters:

a l w r y e

Exercise 19

Make 10 words using these letters:

k y d n o e

Exercise 20

Make 11 words using these letters:

v e n e o l p e

Exercise 21

Make 5 words using these letters:

n r a i

Exercise 22

Make 5 words using these letters:

l c u o d

Exercise 23

Make 5 words using these letters:

r t o m s

Exercise 24

Make 10 words using these letters:

n d n i e r

Exercise 25

Make 6 words using these letters:

g n h i t

Exercise 26

Make 11 words using these letters:

n i g m r o n

Exercise 27

Make 5 words using these letters:

p h s i

Exercise 28

Make 14 words using these letters:

n a l p e

Exercise 29

Make 5 words using these letters:

p h s o

Exercise 30

Make 9 words using these letters:

r p m a

Exercise 31

Make 6 words using these letters:

r c d w o

Exercise 32

Make 3 words using these letters:

d r i b

Exercise 33

Make 17 words using these letters:

r i f n e d

Exercise 34

Make 5 words using these letters:

c u d o l

Exercise 35

Make 4 words using these letters:

w n i e

Exercise 36

Make 3 words using these letters:

e g n n i e

Exercise 37

Make 6 words using these letters:

r b t e u t

Exercise 38

Make 9 words using these letters:

l e o f r w

Exercise 39

Make 7 words using these letters:

o b i r n

Exercise 40

Make 4 words using these letters:

r i b d

Exercise 41

Make 8 words using these letters:

r n e i d n

Exercise 42

Make 3 words using these letters:

i h s f

Exercise 43

Make 2 words using these letters:

t a c

Exercise 44

Make 3 words using these letters:

a l g f

Exercise 45

Make 6 words using these letters:

h c r a i

Exercise 46

Make 17 words using these letters:

b t l e a

Exercise 47

Make 3 words using these letters:

r d o o

Exercise 48

Make 12 words using these letters:

l f w r e o

Exercise 49

Make 2 words using these letters:

l a w l

Exercise 50

Make 5 words using these letters:

r o f l o

Exercise 51

Make 7 words using these letters:

t i c s k

Chapter 9

The English alphabet

The letters in the English alphabet are:

a b c d e f g h i j k l m n o p q r s t u v w x y z

Exercise 1

What are the letters between a and d ?

Exercise 2

What are the letters between b and f ?

Exercise 3

What are the letters between f and h ?

Exercise 4

What are the letters between h and n ?

Exercise 5

What are the letters between n and u ?

Exercise 6

What are the letters between u and z ?

Exercise 7

What are the letters between r and y ?

Exercise 8

What are the letters between m and p ?

Exercise 9

What are the letters between q and y ?

Exercise 10

What are the letters between m and r ?

Exercise 11

What are the letters between l and t ?

Exercise 12

What are the letters between d and l ?

Exercise 13

What are the letters between m and u ?

Exercise 14

How many letters are there in the alphabet ?

Exercise 15

How many letters are there between a and f ?

Exercise 16

How many letters are there between b and h?

Exercise 17

How many letters are there between f and t?

Exercise 18

How many letters are there between p and r?

Exercise 19

How many letters are there between b and l?

Exercise 20

How many letters are there between c and g?

Exercise 21

How many letters are there between o and x?

Exercise 22

How many letters are there between s and z?

Exercise 23

How many letters are there between b and w?

Exercise 24

How many letters are there between f and z?

Exercise 25

How many letters are there between d and m?

Exercise 26

How many letters are there between e and p?

Exercise 27

How many letters are there between a and y?

Chapter 10

Making up numbers

Including 23, find the four numbers you can make using two digits 2 and 3 in 23.

Answer:

The four numbers are: 2 3 23 and 32

Exercise 1

Including 19, find the four numbers you can make using the two digits 1 and 9 in 19.

Exercise 2

Including 34, find the four numbers you can make using the two digits 3 and 4 in 34.

Exercise 3

Including 79, find the four numbers you can make using the two digits 7 and 9 in 79.

Exercise 4

Including 60, find the **three** numbers you can make using the two digits 6 and 0 in 60.

Exercise 5

Including 58, find the four numbers you can make using the two digits 5 and 8 in 58.

Exercise 6

Including 92, find the four numbers you can make using the two digits 9 an2 in 92.

Exercise 7

Including 76, find the four numbers you can make using the two digits 7 and 6 in 76.

Exercise 8

Including 39, find the four numbers you can make using the two digits 3 and 9 in 39.

Exercise 8

Including 83, find the four numbers you can make using the two digits 8 and 3 in 83.

Including 123, find **15** numbers you can make using the 3 digits 1, 2 and 3 in 123.

Answer:

1 2 3 12 13 23 21 31 32 123 132 213 231 321 and 123 itself.

Exercise 9

Including 463, find 15 numbers you can make using the 3 digits 4, 6 and 3 in 463.

Exercise 10

Including 765, find 15 numbers you can make using the 3 digits 7, 6 and 5 in 765.

Exercise 11

Including 895, find 15 numbers you can make using the 3 digits 8, 9 and 5 in 895.

Exercise 12

Including 472, find 15 numbers you can make using the 3 digits 4, 7 and 2 in 472.

Exercise 13

Including 698, find 15 numbers you can make using the 3 digits 6, 9 and 8 in 698.

Exercise 14

Including 165, find 15 numbers you can make using the 3 digits 1, 6 and 5 in 165.

Exercise 15

Including 983, find 15 numbers you can make using the 3 digits 9, 8 and 3 in 983.

Exercise 16

Including 657, find 15 numbers you can make using the 3 digits 6, 5 and 7 in 657.

Exercise 17

Including 113, find **10** numbers you can make using the 3 digits 1, 1 and 3 in 113.

Exercise 18

Including 715, find 15 numbers you can make using the 3 digits 7, 1 and 5 in 715.

Exercise 19

Including 692, find 15 numbers you can make using the 3 digits 6, 9 and 2 in 692.

Exercise 20

Including 759, find 15 numbers you can make using the 3 digits 7, 5 and 9 in 759.

Chapter 11

Writing numbers in order of size

Numbers in ascending order

Write these numbers in **ascending order**. That is, from smallest to biggest.

	Answer
7 6 8	6 7 8

Exercise 1

Write 4 9 3 in ascending order.

Exercise 2

Write 8 4 2 in ascending order.

Exercise 3

Write 11 9 10 in ascending order.

Exercise 4

Write 0 6 1 in ascending order.

Exercise 5

Write 8 1 2 in ascending order.

Exercise 6

Write 3 1 6 in ascending order.

Exercise 7

Write 2 9 7 in ascending order.

Exercise 8

Write 8 11 4 in ascending order.

Exercise 9

Write 21 11 10 in ascending order.

Exercise 10

Write 45 21 34 in ascending order.

Exercise 11

Write 65 42 23 in ascending order.

Exercise 12

Write 20 19 12 in ascending order.

Exercise 13

Write 43 100 19 in ascending order.

Exercise 14

Write 4 3 2 6 in ascending order.

Exercise 15

Write 2 8 3 7 in ascending order.

Exercise 16

Write 6 1 2 9 in ascending order.

Exercise 17

Write 5 0 3 4 in ascending order.

Exercise 18

Write 8 3 6 2 in ascending order.

Exercise 19

Write 5 9 1 4 in ascending order.

Exercise 20

Write 3 1 4 2 in ascending order.

Exercise 21

Write 8 1 6 3 in ascending order.

Exercise 22

Write 4 7 1 9 in ascending order

Exercise 23

Write 10 7 3 6 in ascending order.

Exercise 24

Write 8 3 5 4 9 in ascending order.

Exercise 25

Write 3 7 2 6 11 in ascending order.

Exercise 26

Write 1 5 2 8 4 in ascending order.

Exercise 27

Write 5 3 1 8 6 in ascending order.

Exercise 28

Write 6 2 7 4 9 in ascending order.

Exercise 29

Write 3 5 2 8 4 in ascending order.

Exercise 30

Write 9 5 1 3 6 in ascending order.

Exercise 31

Write 11 4 3 2 1 in ascending order.

Exercise 32

Write 3 12 6 4 2 in sending order.

Exercise 33

Write 8 1 3 6 2 in ascending order.

Numbers in descending order

Write these numbers in **descending order** (from biggest to smallest)

5 3 7

Answer
7 5 3

Exercise 1

Write 9 8 10 in descending order.

Exercise 2

Write 3 6 2 in descending order.

Exercise 3

Write 2 7 4 in descending order.

Exercise 4

Write 6 9 3 in descending order.

Exercise 5

Write 1 8 6 in descending order.

Exercise 6

Write 5 4 8 in descending order.

Exercise 7

Write 11 8 9 in descending order.

Exercise 8

Write 3 6 2 8 in descending order

Exercise 9

Write 2 9 5 7 in descending order.

Exercise 10

Write 6 3 8 5 in descending order.

Exercise 11

Write 1 6 3 9 in descending order.

Exercise 12

Write 4 3 6 5 in descending order.

Exercise 13

Write 1 10 9 4 in descending order.

Exercise 14

Write 3 7 1 6 in descending order.

Exercise 15

Write 2 9 7 4 in descending order.

Exercise 16

Write 5 10 2 6 in descending order.

Exercise 17

Write 5 3 8 4 9 in descending order.

Exercise 18

Write 6 7 3 1 8 in descending order.

Exercise 19

Write 4 9 5 3 2 in descending order.

Exercise 20

Write 9 4 7 2 6 in descending order.

Exercise 21

Write 8 10 3 5 1 in descending order.

Chapter 12

Missing numbers

Find the missing number in this lists of numbers:

	Answer
1 2 3 - 5 6	1 2 3 **4** 5 6
Exercise 1	
Find the missing number in this list of numbers:	2 3 4 - 6 7
Exercise 2	
Find the missing number in this list of numbers:	1 3 5 - 9 11
Exercise 3	
Find the missing number in this list of numbers:	3 6 9 - 15 18
Exercise 4	
Find the missing number in this list of numbers:	2 6 10 - 18 22
Exercise 5	
Find the missing number in this list of numbers:	4 - 6 7 8 9
Exercise 6	
Find the missing number in this list of number:	3 5 - 9 11 13

Chapter 13

I think of a number

	Answer
I think of a number and add 2 to it. The answer is 5. What is the number?	3
Exercise 1	
I think of a number and add 5 to it. The answer is 7. What is the number?	

Exercise 2

I think of a number and subtract 3 from it. The answer is 6. What is the number?

Exercise 3

I think of a number and subtract 3 from it. The answer is 7. What is the number?

Exercise 4

I think of a number and subtract 5 from it. The answer is 1, What is the number?

Chapter 14

Making the biggest and smallest numbers

	Answers
Using the numbers 4 and 6 make the largest and smallest numbers	largest 64 smallest 46
Using the numbers 9, 4, 7 make the largest and smallest numbers	largest 974 smallest 479

Exercise 1

Using the numbers 8 and 2 make the largest and smallest numbers

Exercise 2

Using the numbers 6 , 7 and 2 make the largest and smallest numbers

Exercise 3

Using the numbers 9, 1 and 5 make the largest and smallest numbers

Exercise 4

Using the numbers 3, 6 and 2 make the largest and smallest numbers

Exercise 5

Using the numbers 5, 9 and 4 make the largest and smallest numbers

Exercise 6

Using the numbers 3, 5, 9 and 2 make the largest and smallest numbers

Exercise 7

Using the numbers 8, 5, 7 and 2 make the largest and smallest numbers

Chapter 15

Odd one out!

What is the odd one out in this list?

Answer

4 6 17 P 9 1 P

Exercise 1

What is the odd one out in this list? 7 a 8 3

Exercise 2

What is the odd one out in this list? £ 6 $ > % &.

Exercise 3

What is the odd one out in this list ? 2 4 6 9 10 12

Exercise 4

What is the odd one out in this list? 1 3 5 7 8 11 13

Exercise 5

What is the odd one out in this list? a e i p o u

Exercise 6

What is the odd one out in this list? p q a r s t

Exercise 7

What is the odd one out in this list? red blue green dog yellow

Exercise 8

What is the odd one out in this list? dolphin penguin rabbit whale

Exercise 9

What is the odd one out in this list? Monday Tuesday December Saturday

Exercise 10

What is the odd one out in this list? January February Friday June July

Exercise 11

What is the odd one out in this list? John William Henry Jane David

Exercise 12

What is the odd one out in this list? Alice Betty Clive Jane Ann

Exercise 13

What is the odd one out in this list? cow pig horse giraffe sheep

Exercise 14

What is the odd one out in this list? pound dollar boy rupee

Exercise 15

What is the odd one out in this list? London Swansea Paris Bristol

Exercise 16

What is the odd one out in this list? car bus boat lorry

Exercise 17

What is the odd one out in this list? ship submarine speed boat bicycle

Exercise 18

What is the odd one out in this list? football rugby hockey darts

Exercise 19

What is the odd one out in this list? hour second minute door day

Chapter 16

Number exercises

Exercise 1

Which number appears twice in this list of numbers?

4 1 7 0 6 1 9

Exercise 2

Which **number** appears twice in this list of numbers?

3 7 2 6 7 3 9 3 4

Exercise 3

Which numbers appear twice in this list of numbers?

6 1 5 8 3 1 11 2 5 9

Exercise 4

Which numbers appear twice in this list of numbers?

8 0 4 9 2 1 0 4 7

Exercise 5

Which numbers appear twice in this list of numbers?

0 5 3 7 4 5 2 7 3 12

Exercise 6

Which numbers appear twice in this list of numbers?

9 5 6 1 8 3 2 8 6 10

Exercise 7

Which numbers appear twice in this list of numbers?

3 2 0 1 5 7 2 9 1

Exercise 8

Which **number** appears twice in this list of numbers?

12 10 9 3 7 10 8

Exercise 9

Which numbers appear twice in this list of numbers?

7 4 2 1 7 3 6 2 1

Exercise 10

Which numbers are less than 3 in this list of numbers?

7 4 2 5 1 0

Exercise 11

Which numbers are less than 4 in this list of numbers?

5 3 1 2 7

Exercise 12

Which numbers are less than 6 in this list of numbers?

9 5 7 6 4 8 10

Exercise 13

Which numbers are less than 2 in this list of numbers?

3 0 5 6 4 3 2 0 1

Exercise 14

Which numbers are less than 7 in this list of numbers?

8 9 7 5 6 10 11 0

Exercise 15

Which numbers are less than 10 in this list of numbers?

1 11 10 9 6 8 4 12

Exercise 16

Which numbers are less than 4 in this list of numbers?

4 3 5 0 6 9 1

Exercise 17

Which numbers are more than 3 in this list of numbers?

1 2 3 4 5 6 7

Exercise 18

Which numbers are more than 5 in this list of numbers?

6 5 4 7 3 1 8 9

Exercise 19

Which numbers are more than 8 in this list of numbers?

7 5 9 3 10 6 8 4

Exercise 20

Which of these numbers when written in words end in the letter n ?

1 2 3 4 5 6 7 8 9 10

Exercise 21

Which of the numbers from 1 to 10 end with the letter e, the letter o, the letter r, the letter x and finally the letter t ?

Exercise 22

How many numbers from 1 to 10 when written in words have four letters in them?

Exercise 23

How many numbers from 1 to 12 when written in words have five letters in them?

Chapter 17

Letters and word exercises

Exercise 1

How many times does the letter e appear in the word sometimes ?

Exercise 2

How many times does the letter m appear in the word sometimes?

Exercise 3

How many times does the letter s appear in the word sometimes?

Exercise 4

How many times does the letter o appear in the word football?

Exercise 5

How many times does the letter l appear in the word football ?

Exercise 6

How many times does the letter o appear in the word controversial ?

Exercise 7

How many times does the letter s appear in the word trespass ?

Exercise 8

How many times does the letter c appear in the word cricket ?

Exercise 9

How many times does the letter s appear in the word distress ?

Exercise 10

How many times does the letter p appear in the word disappointing ?

Exercise 11

How many times does the letter n appear in the word disappointing ?

Exercise 12

How many times does the letter i appear in the word disappointing ?

Chapter 18

More number exercises

Exercise 1

How many times does the number 2 appear in the number 26?

Exercise 2

How many times does the number 1 appear in the number 131 ?

Exercise 3

How many times does the number 0 appear in the number 600 ?

Exercise 4

How many times does the number 6 appear in the number 606 ?

Exercise 5

How many times does the number 4 appear in the number 4154 ?

Exercise 6

How many times does the number 3 appear in the number 31233 ?

Exercise 7

How many times does the number 9 appear in the number 189979 ?

Exercise 8

Which one of these words has the most letters ?

when state tomorrow ball rugby

Chapter 19

More word exercises

Writing letters in reverse order to form words

When the letters **y a d o t** are reversed what word is formed?
Answer: today

Exercise 1

What words are formed when these letters are reversed?

e r e h d r i b l a m i n a r a e e s o n h t u o m

y d o b r i a h t o o f d l o e v a s e m o h

t i b b a r e s r o h t a c g o d e s u o m e l o p

e t a g d l e i f

Chapter 20

Yet more number exercises

Exercise 1

Which whole numbers from nought to ten have curves in them?

Exercise 2

Which whole numbers from nought to ten do not have curves in them?

Exercise 3

Write the **even** numbers between 0 to 10 in reverse order.

Exercise 4

Write the **odd** numbers between 0 to 10 in reverse order.

Exercise 5

How many whole numbers are there that are less than ten but more than nought?

Exercise 6

Which names of days of the week have 6 letters?

Exercise 7

Which names of days of the week have 7 letters?

Exercise 8

Which names of days of the week have 8 letters?

Exercise 9

Which names of days of the week have 9 letters?

Exercise 10

Which names of the months of the year have 3 letters?

Exercise 11

Which names of the months of the year have 4 letters?

Exercise 12

Which names of the months of the year have 5 letters?

Exercise 13

Which names of the months of the year have 6 letters?

Exercise 14

Which names of the months of the year have 7 letters?

Exercise 15

Which names of the months of the year have 8 letters?

Exercise 16

Which names of the months of the year have 9 letters?

Exercise 17

How many more letters than numbers are there in this list?

P 1 Q 2 7 R 3 T V W

Exercise 18

How many more numbers than letters are there in this list?

5 D R 7 Q 1 8 9 T

Exercise 19

How many more letters are there than numbers in this list?

L M 2 7 U 9 X A

Exercise 20

How many more numbers are there than letters in this list?

9 8 A R 7 C 6 P Q 2 5 1

Exercise 21

How many letters are there altogether in the numbers 1 and 2 when they are written in words?

Exercise 22

How many letters are there altogether in these numbers when they are written in words?

3 and 4

Exercise 23

Now many letters are there altogether in these numbers when they are written in words?

5 and 6

Exercise 24

How many letters are there altogether in these numbers when they are written in words?

7 and 8

Exercise 25

How many letters are there altogether in these number when they are written in words?

9 and 10

Exercise 26

How many letters are there altogether in these numbers when they are written in words?

3 and 5

Exercise 27

How many letters are there altogether in these numbers when they are written in words?

4 and 6

Exercise 28

How many letters are there altogether in these numbers when they are written in words?

7 and 9

Exercise 29

How many letters are there altogether in these numbers when they are written in words?

1 and 11

Exercise 30

How many letters are there altogether in these numbers when they are written in words?

13, 15 and 19

Chapter 21

To stimulate your brain, attempt these exercises at your own speed but If you really want to give your brain a thorough workout, set yourself a target of 20 minutes for each exercise.

You will need pencil and paper for these exercises

Exercise 1

Write down 10 words of any size using the letters in the word 'remember'.

Write down the word 'remember' using your non-dominant hand.

Again, write below the word 'remember' but this time write it backwards, using your non-dominant hand.

Using the letters a. p, t and o write down 10 words consisting of 2 or 3 letters.

How many whole numbers are there between 17 and 26?

Write down the word 'dancing' backwards with your non dominant hand.

Write down the number 5 657 backwards with your non dominant hand.

Pick the odd one out in this list:

A H U 7 P Q R D

I thought of a number, multiplied it by 2 and the answer was 6. What was the number I thought of?

Write down the numbers 6 8 3 9 2 7 5 0 5 from smallest to biggest.

Exercise 2

Write down 12 words, with two letters or more in them, using the letters in the word 'amount'

Write down the word 'answer' with your non-dominant hand.

Write down the word 'answer' backwards with your non-dominant hand.

Write down 5 words with two letters or more in them using the letters p o r and d. What word do the letters form when written backwards?

Write down 10 numbers using the three numbers in 715.

Write down the numbers 10, 6 5 3 2 and 9 from smallest to biggest.

Write down the numbers 6 8 4 7 3 and 2 from biggest to smallest.

In this list of numbers, what is the odd one out?

5 4 8 9 6 and 2

Write down the letters in the English alphabet between b and p?

What is the missing number in this list?

4 7 - 13 16 19

Exercise 3

Write down 10 words using the letters in the word 'absent'.

Write down 10 words using the letters b t l e a

In the alphabet, write down, in reverse order, the letters between h and n.

Find the odd one from this list

9 6 7 P 5 1

Which two numbers appear twice in this list?

4 1 7 0 6 1 9 2 7 3

What is the difference between the largest number and the smallest number in this list:

2 1 7 6 4 3 8 5 0?

What is the sum of the largest and smallest number in this list

6 1 3 9 7 4 2?

When the letters y a d o and t are reversed what word do they form?

Write down the word tomorrow using your non dominant hand.

Write down the number 8 945 backwards using your non dominant hand.

Exercise 4

Which whole numbers from nought to ten have curves in them?

Which names of the days of the week have eight letters in them?

What word is formed when the letters d l e i f are reversed?

How many times does the number 9 appear in the number 1 8 9 8 9 8 9?

How many times does the letter i appear in the word 'disappointing' ?

Write the word 'disappointing' backwards with your non-dominant hand.

Which of the numbers from 1 to 10 when written in words end with the letter e?

Which numbers are greater than 3 in this list?

1 4 5 2 6 0 7

Write the numbers in this list in descending order:

8 2 9 1 0 3 4 5

How many letters are there in the English alphabet between c and x?

Exercise 5

Pick the odd one out from this list of numbers:

1 3 5 7 8 11 13

Write these numbers from smallest to largest:

8 4 7 3 2 1 9

Write these numbers from largest to smallest.

6 3 8 2 10 7 4

What is the difference between the largest and the smallest number?

What is the sum of the largest and smallest number?

I think of a number and add 2 to it, and the answer is 5. What is the number?

The largest number made from 4 and 6 is 64.

Using 8 and 2 make the largest and smallest numbers.

Write down 10 words using the letters in the word 'cream'.

Make 10 words using these letters: s h u o e

Which two numbers appears twice in this list of numbers?

6 7 3 9 2 7 8 5 3 1

Exercise 6

Write down 17 words with two or more letters in them using the letters r i f n e d.

Write down 10 words with two letters or more in them using the letters in the word 'rabbit'

In the alphabet, what are the letters between r and y when written backwards?

Write down 14 numbers using the three numbers in the number 123.

Write these numbers from largest to smallest:

12 6 5 15 2 9

Write these numbers from smallest to largest.

99 89 88 87

Which numbers are less than 4 in this list?

6 0 5 4 3 1 9

Multiply the smallest number by the largest number.

Exercise 7

Which number appears twice in this list?

1 7 2 6 7 3 9 3 4

Which of these numbers when written in words end with the letter n?

1 2 3 4 5 6 7 8 9 10

What number do you get when you multiply the smallest number by the largest number in this list?

How many times does the letter s appear in the word trespass?

How many numbers from 1 to 12 when written in words, have five letters in them?

How many letters are there altogether in these three numbers when they are each written in words: 1, 3, and 7?

How many even numbers are there in this list:

3 6 8 9 12?

Write down the word 'afternoon' with your non dominant hand.

Write down the word 'afternoon' backwards with your non dominant hand.

Exercise 8

How many letters are there altogether when these two numbers written in words

13 and 15?

What word is formed when these letters are reversed

t i b b a r?

Write down the odd numbers between 0 and 10 in reverse order.

Write down the word 'scramble' using your dominant hand.
Now write down the word 'scramble' backwards using your dominant hand.
Now write down the word 'scramble' using your non dominant hand
Now write the word 'scramble' backwards using your non dominant hand.

Write down the number 547 using your dominant hand.
Now write down the number 547 backwards using your dominant hand.
Now write down the number 547 using your non dominant hand.
Now write down the number 547 backwards using your non dominant hand.

Exercise 9

Write down 8 words with three letters or more in them using the letters in the word 'grant'

Write down 12 words with two letters or more in them using these letters:

n a l p e

How many letter are there in the alphabet between s and z?

Write the letters in the alphabet between p and v in reverse order.

Write down 14 numbers using the three numbers in 463

I think of a number and subtract 3 from it, and the answer is 10. What is the number?

Find the missing number in this list:

1 2 3 _ 5 6

Write down the word 'sometimes' using your non dominant hand.

Write down the word 'believe' backwards using your non dominant hand.

Exercise 10

Using the numbers 6, 7 and 2 to make the largest number

What is the smallest number you can make using 6, 7 and 2?

Pick the odd one out

a e i p o u

Which two numbers appear twice in this list:

9 5 6 1 8 3 2 2 8 6 10?

Write the numbers from largest to smallest

Which numbers are less than 6 in this list?

9 5 3 6 8 10 1

Write 9 words with two letters or more using the letters in the word 'forage'

Write down the word 'florist' with your non dominant hand.

Write down the word 'halfpenny' backwards with your non dominant hand.

Exercise 11

Which whole numbers from nought to ten do not have curves in them?

Write the odd numbers between 0 and 10 in reverse order.

Which names of the days of the week have eight letters in them?

Write the letters e s u o m backwards to form a word.

A number between 0 and 10 ends with the letter x. Which one is it?

How many times does the letter e appear in the word 'sometimes'?

Pick the odd one out:

red blue green yellow dog pink purple

Write the word 'evening' with your non dominant hand.

Write the word 'morning' with your non dominant hand.

Exercise 12

Which numbers from one to nine are made up of straight lines?

Write the even numbers from one to eleven in reverse order.

Which names of the days of the week have six letters in them?

Write the letters y e k n o d backwards to form a word.

Which numbers between one and ten end with the letter e?

Which names of the months of the year have the fourth letter u?

Pick out the odd one out

square rectangle triangle circle

Write down in words, in reverse order, the numbers between three and seven

Write down the word 'joyful' backwards using your non dominant hand.

Write down the number 12 569 backwards using your non dominant hand.

Exercise 13

Write these numbers in ascending order (from smallest to largest)

1 7 6 3 5

Write down 10 words using the letters in the word 'athletic'.

Write down seven words using the letters t i c s k

Using the three numbers in the number 762 write down seven different numbers.

How many letters are there in the English alphabet between g and n?

Write complete words by finding the missing letters in these:

R – BB – T CRIM – ON F - - TBA- - CH – I - TMAS

Which numbers appear twice in this list

7 4 2 1 7 3 6 2 1?

Write down the word 'devise' backwards using your dominant hand.

Write down the word 'heaven' backwards using your non dominant hand.

Exercise 14

Draw these arrows backwards using your non dominant hand.

Copy this diagram using your non dominant hand

A	B	C	D
1	2	3	4

A + B = 1 + 2 = 3

Now copy and complete these

B + C = C + D = A + C = B + D =

Write PQRS backwards using your non dominant hand.

Using the letters in the word 'learning' write down five words having four letters in them.

Write these words from largest to smallest by counting the number of letters in each word:

red yellow green blue magenta

Exercise 15

Write these numbers in ascending order:

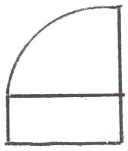
7 6 3 5 1 8 2

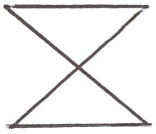
Write down 12 words you can make using the letters in the word 'lament'

Write down 12 numbers you can make using the three digits in the number 762.
They can be 1 digit, 2 digit or 3 digit numbers.

Write down 7 words you can make using these letters: o b i r n

Draw these two diagrams using your dominant hand.
Now draw them again using your non dominant hand.





Pick the odd one out in this list

red orange yellow green purple blue indigo violet

Write these words in ascending order by counting the number of letters in each word:

blue green yellow red

How many letters are there between p and y in the English alphabet

Write down the word **magician** using your dominant hand.
Now write down the word **magician** backwards using your dominant hand.
Now write down the word **magician** using your non dominant hand
Now write down the word **magician** backwards using your non dominant hand.

Exercise 16

How many numbers between 4 and 10 have curves in them?

Draw these two diagrams using your dominant hand.
Draw the two diagrams again using your non dominant hand.

Which days of the week have 6 letters in them?

Pick the odd one out in this list:

Q P T R M L 0 X N

How many letters are there altogether in the numbers 3, 5 and 8 when they are written in words?

Which is the biggest number 989 or 998 ?

In this list of numbers which numbers are bigger than 4 and also less than 8?

5 3 6 9 10 1

I think of a number and then add 4 to it and the answer I get is 12. What number did I think of?

Which number is missing from this list?

2 6 10 - 18 22

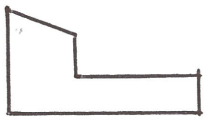
What word is formed when these letters are written backwards s s e n i p p a h

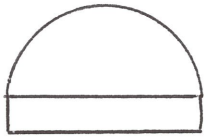
Exercise 17

I think of a number and take 2 away from it and the answer I get is 6. What number did I think of?

Write down the word **thunderstorm** with your dominant hand.
Now write down the word **thunderstorm** backwards with your dominant hand.
Now write down the word **thunderstorm** with your non dominant hand.
Now write down the word **thunderstorm** backwards with your non dominant hand.

Draw these two diagrams with your dominant hand.
Now draw the two diagrams with your non dominant hand.





Write down the letters between d and h in the alphabet with your dominant hand.
Now write down the same letters backwards with your non dominant hand.

Write these numbers in ascending order:

10 6 4 12 8 15

Which numbers in this list are less than 7 but bigger than 2?

3 6 8 2 9 4 5

What number is missing from this list?

10 8 6 4 2 -

Which months of the year have the same number of letters in them?

Which days of the week have the same number of letters in them?

Complete the following to make words:

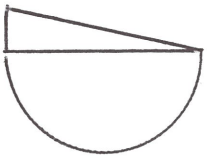
T – N N - S C H – I – T M A S R - B B I T

Exercise 18

Write down 9 words you can make using the letters r p m and a

Which numbers from 1 to 12 have four letters in them when they are written in words?

Draw these two diagrams using your dominant hand.
Then draw them using your non dominant hand.



Write down the first 10 letters in the English alphabet with your dominant hand.
Then write down the first 10 letters backwards with your non dominant hand.

Write down the numbers from 13 to 17 with your dominant hand.
Now write down the numbers from 13 to 17 backwards with your non dominant hand.

When written backwards what words do these letters form?

e c n a l u b m a e c n e i t a p

Write down the numbers from 1 to 10 which have curves in them.

Write down the names of the numbers between 1 and 10 which have 5 letters in them.

Which numbers between 2 and 7 end with the letter e when written in words?

Find the two missing numbers in this list:

2 4 - 8 10 12 -

Exercise 19

How many letters are there in the English alphabet between s and y?

I think of a number and add 3 to it. The answer is 7. What number did I think of?

Pick the odd one out in this list:

2 6 8 4 9 3

Which numbers appears twice in this list?

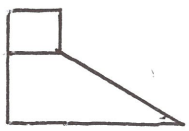
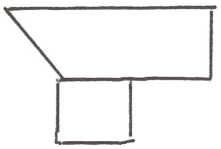
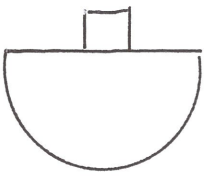
3 7 2 5 8 7 6 1 0 10 2 4

Which numbers are less than 6 in this list of numbers?

8 6 5 3 9 2 4 7 10

Write down your first name backwards with your non dominant hand.

Draw these three diagrams with your non dominant hand.

How many times does the letter a appear in the words January and February combined?
Which other letters appears twice?

What words are formed when these letters are written backwards?

o l l e h r e b m e m e r t e g r o f

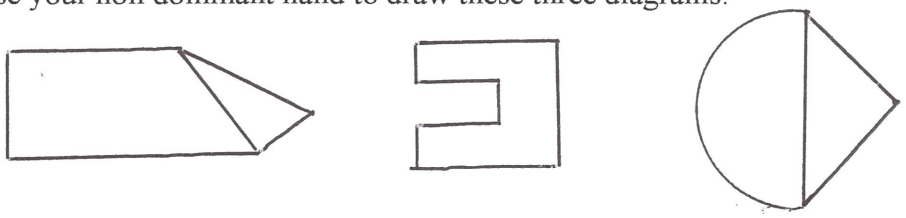
How many more letter are there than numbers in this list?

F G 5 Y Z 3 U 9 X 1 K L

Exercise 20

How many letters altogether are there in 20 and 17 when they are written in words?

Use your non dominant hand to draw these three diagrams:



Write the word **remembering** backwards using your non dominant hand.

Which name of the month of the year has 9 letters?

Write these numbers in ascending order:

12 3 15 4 16 5 17 6

Write down five words using the letters i a r n

Pick the odd one out in this list of numbers

7 6 4 8 2

How many letters are there in the English alphabet between s and z?

Find the missing number in this list:

10 13 16 - 22 25

How many letters are there altogether in the numbers 60 and 70 when written in words?

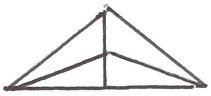
Exercise 21

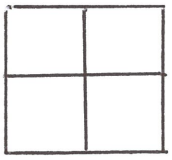
Write down these letters using your dominant hand:

p q r s

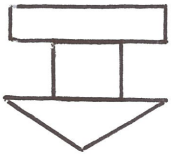
Now write them down backwards with your dominant hand.
Now write them down with your non dominant hand.
Now write them down backwards with your non dominant hand.

How many squares and triangles are there in these diagrams?



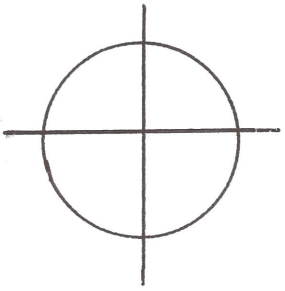


Draw this diagram upside down:



Write down all the numbers between 86 and 92 from biggest to smallest.

Draw this diagram with your dominant hand.
Now draw the diagram with your non dominant hand.



Exercise 22

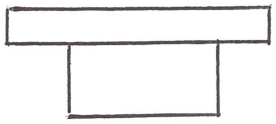
What words do these letters form when written backwards:

y a d r e t s e y

e l i d o c o r c?

Write this number the right way up and then total the 5 digits:

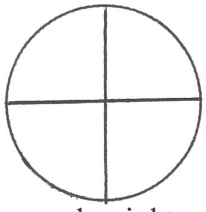
Draw this diagram upside down:



Write down the words 'be confident' with your dominant hand.
Now write down the words 'be confident' backwards with your non dominant hand.

Write down the sentence 'Yes, let's play tennis' with your dominant hand.
Now write down the sentence 'Yes, let's play tennis with your non dominant hand.

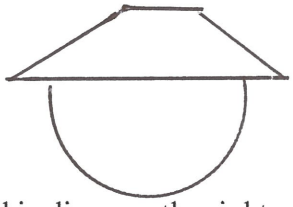
Draw this diagram with your dominant hand.
Now draw the diagram with your non dominant hand.



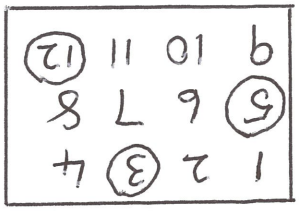
Write these letters the right way up:

Exercise 23

Draw this diagram upside down:

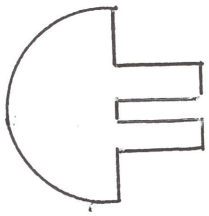


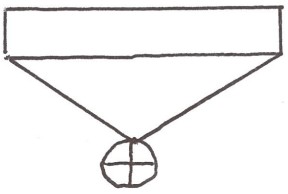
Draw this diagram the right way up and add up the numbers shown in circles.

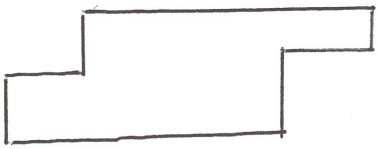


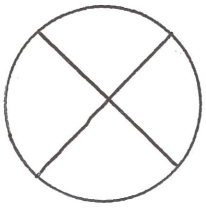
Draw these 5 diagrams with your dominant hand.

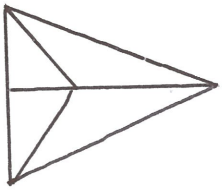
Now draw the diagrams with your non dominant hand.











Chapter 22 Brain teasers

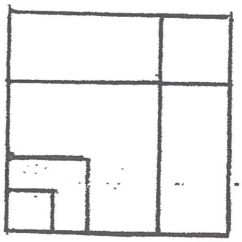
Challenge your brain by attempting these brain teasers

How many numbers can you see in this diagram?

What are the two missing numbers in this series of numbers?

1, 3, 5, 7, 9, __, 13, __, 17

How many squares can you see in this diagram?



What is the odd one out in this list of letters?

L M N T O K

Work out $\frac{4}{1/2}$

What is the odd one out in this list of months?

March April May June July

WORD AND NUMBER BRAIN EXERCISES

What is unusual about these words?

revive banana grammar voodoo assess potato dresser

Which is the odd one out in this list of numbers?

4377 3954 9862 8454 9831

Which is the odd one out in this list of words?

FLOW SNIP TRAP DRAW BACK

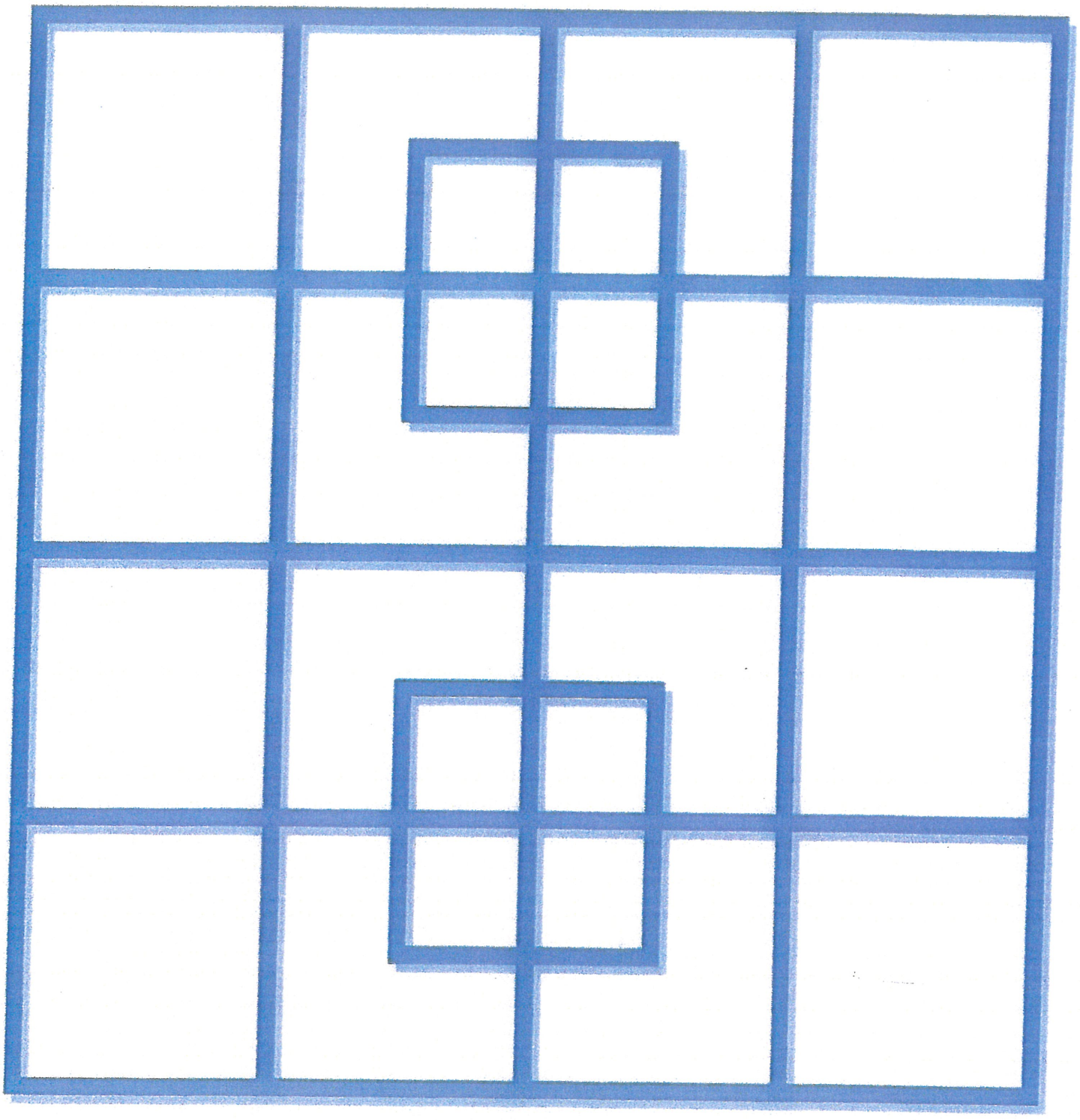
Guess the next three letters in this series: **GTNTL**

What is the next number in this series?

2, 6, 18, 54, 162, ...

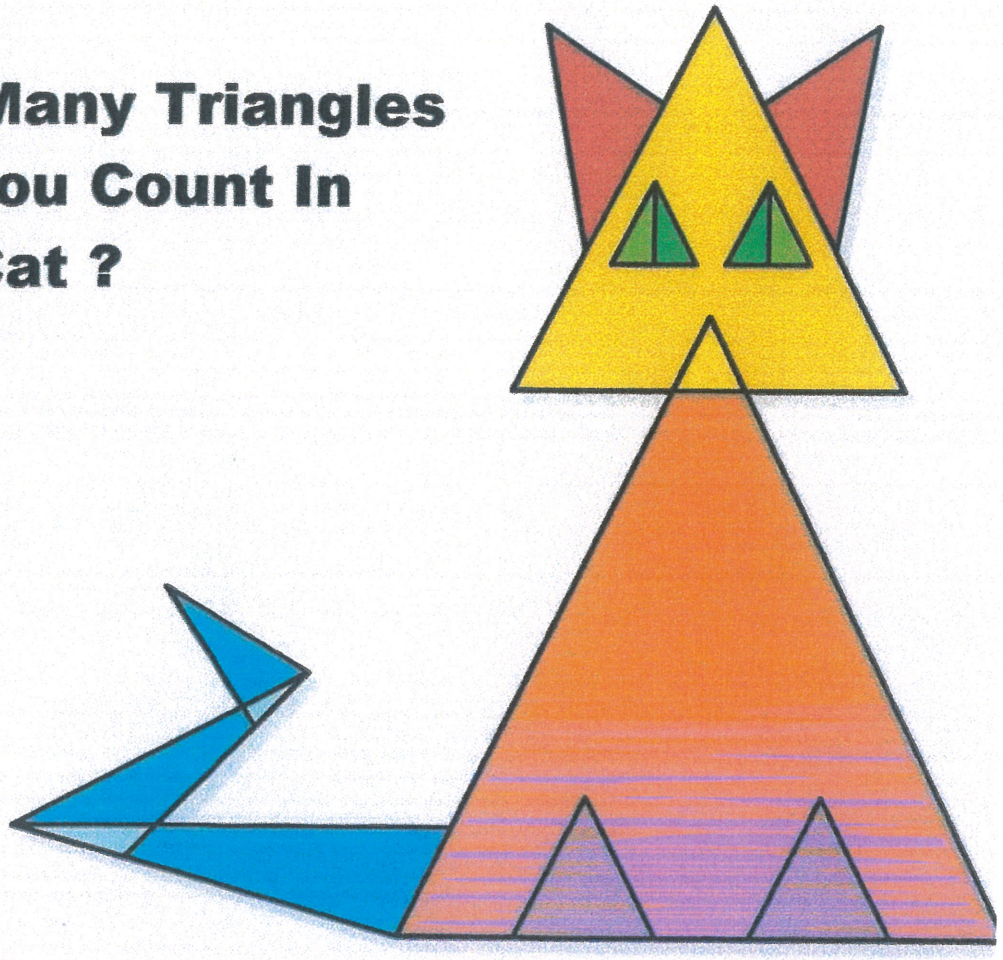
What is **half of a half of a half**?

Work out: **6 + 8 x 5 – 4 x 8**

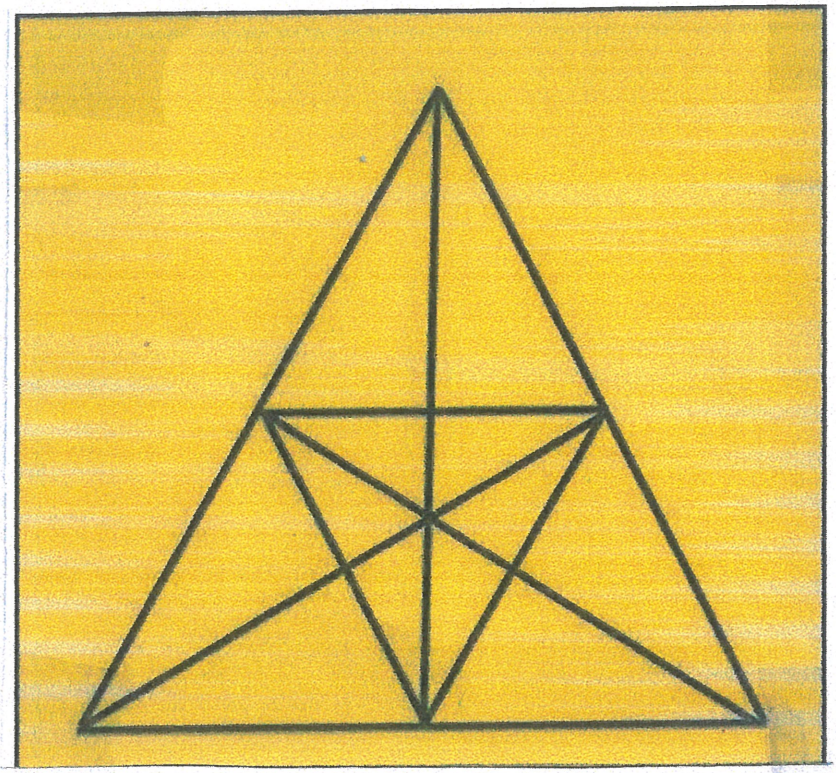


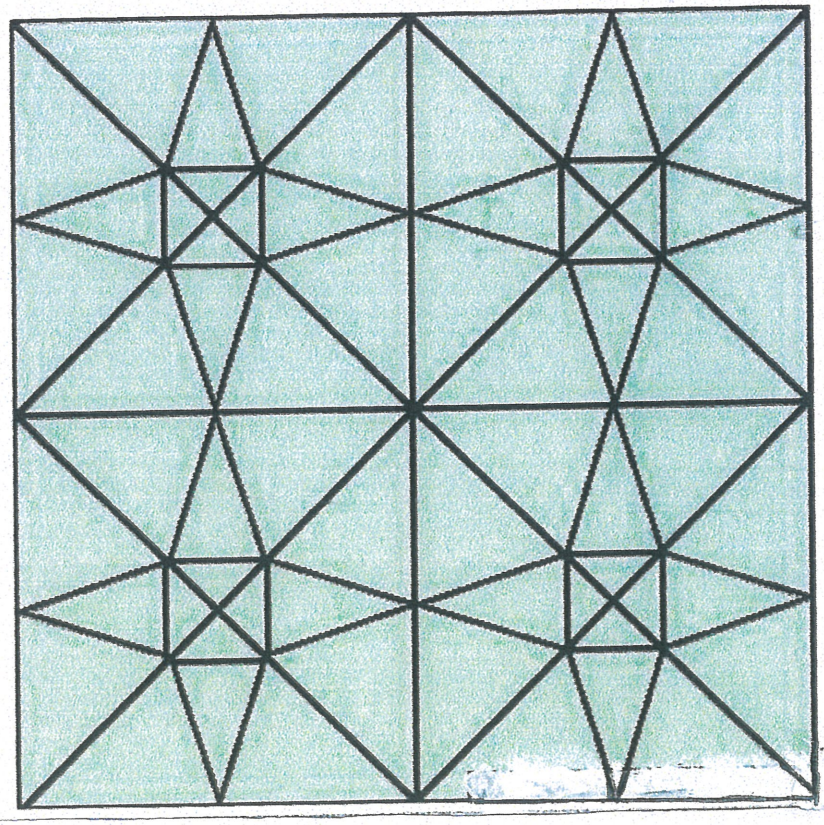
How many squares are in the picture?

How Many Triangles Can You Count In This Cat ?

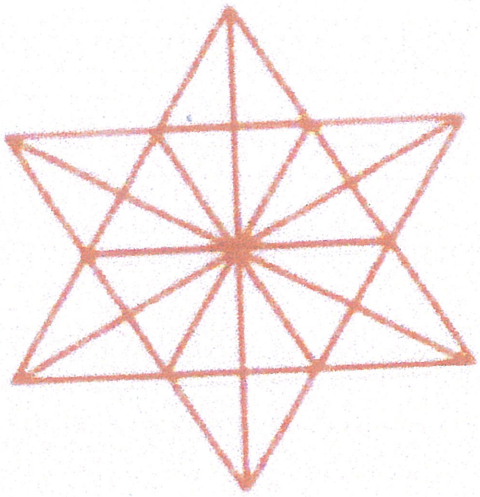


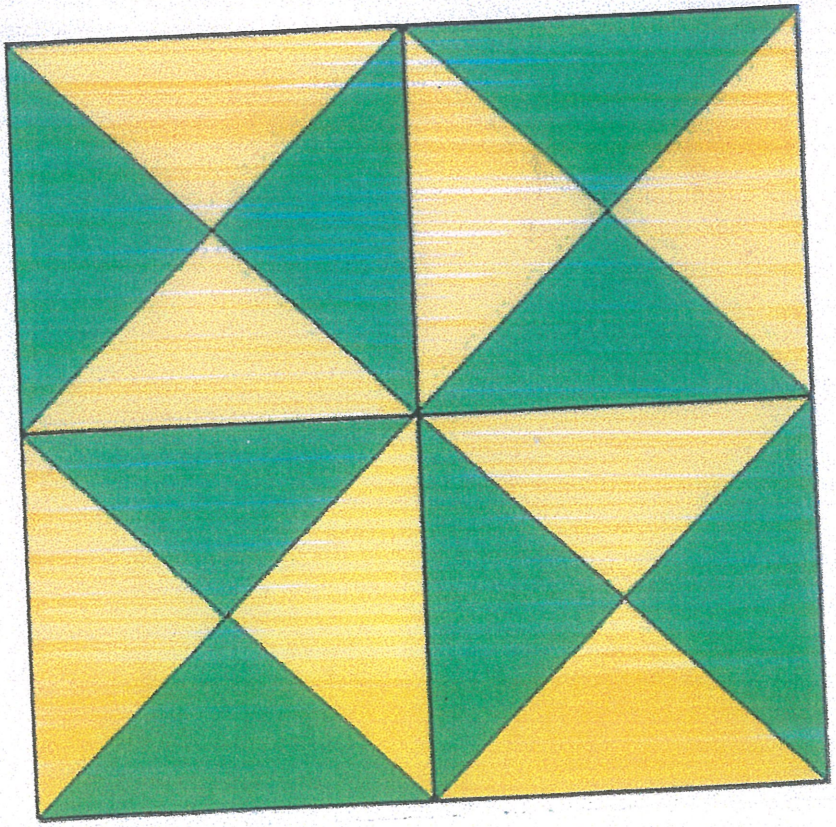
How Many Triangles

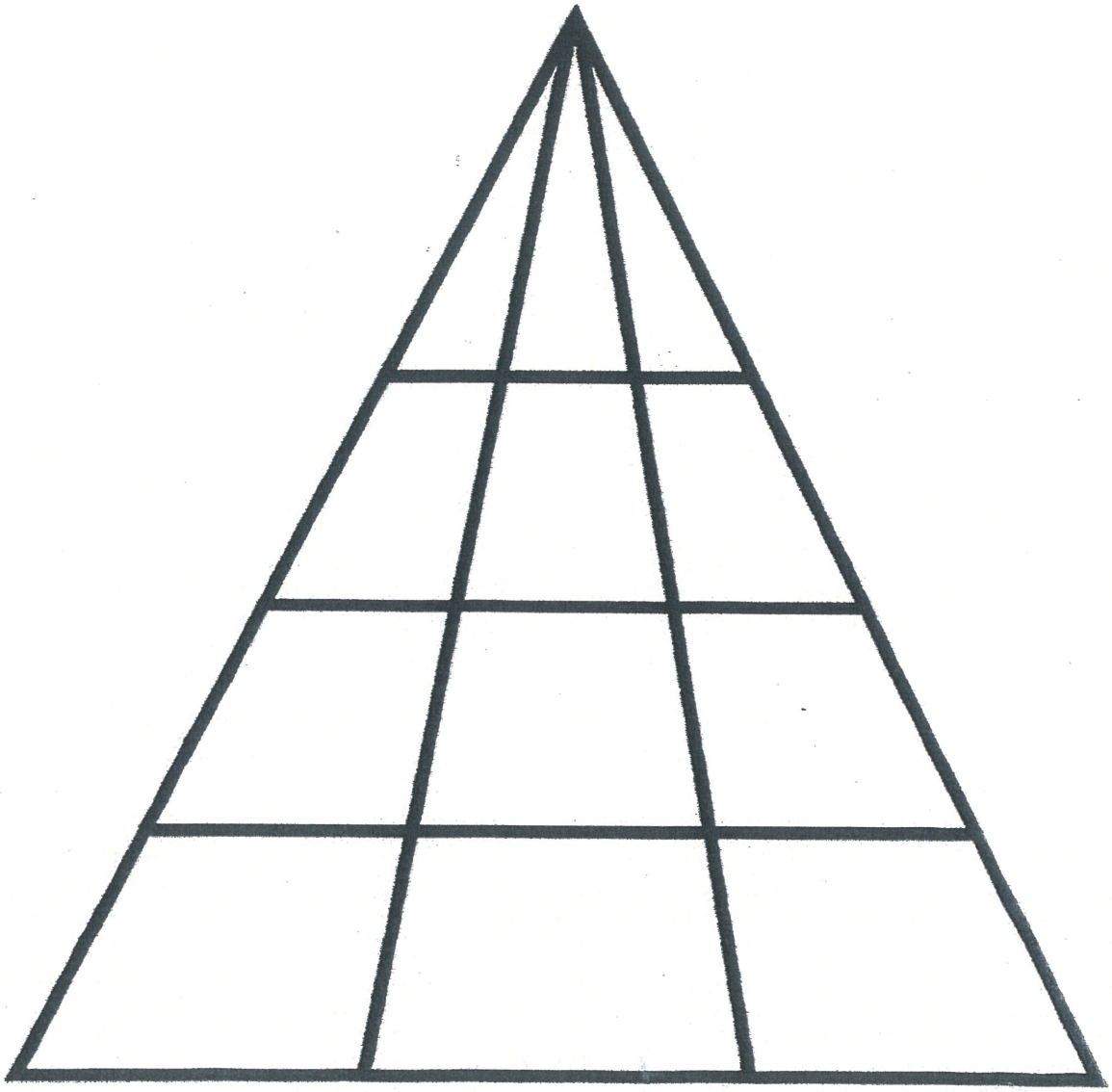




HOW MANY TRIANGLES







HOW MANY TRIANGLES IN THE PICTURE?

REHABILITATION

How many words with two letters or more can you make using the letters in the above word?

Chapter 23 Neurobic art and design

Introduction to this resource

In this resource on the applications of Neurobic exercises in art and design, you will be using your non dominant hand along with various drawing instruments to create your own attractive designs by colouring in spaces created when geometrical shapes overlap each other.

The geometrical shapes you will draw are commonly seen in the world around us especially when you look at the architecture of some of our buildings and homes or even the type of packaging used for the various items we buy at shops and supermarkets.

Before you start looking at the various design examples created using two or more overlapping mathematical shapes, it would be very helpful for you if you could spare some time to look at the 'guide to Neurobic exercises' that I have compiled as this would then help you when attempting the exercises in this resource.

When you have completed some of your designs you may wish to place two or more of them together to create a framed design which you can then display. An example is shown in the Examples section.

By visiting the author's website www.battledementia.co.uk you will be able to find more resources on the uses of Neurobic exercises to combat memory loss. These resources can be downloaded free of charge.

Neurobic exercises are designed to stimulate the brain and improve memory retention. The exercises support the growth of new brain cells (neurons) and in turn promote the nerve cells 'to send messages to each other'.

An active brain is a healthy brain and our brains enjoy tackling challenging exercises.

According to ongoing research, Neurobic exercises help delay memory loss and keep the mind working 'better for longer'.

By creating the colourful non dominant hand mathematical designs you are challenging your brain by using your non dominant hand to draw and colour and at the same time you are rewarded with a beautiful design you have enjoyed creating.

Materials required

Note:

You will no doubt find that a geometric shapes stencil would most helpful in the drawing of the mathematical shapes especially the circles and the ellipses. These stencils can be obtained from most stationery outlets and on line from Amazon and other stationery providers.

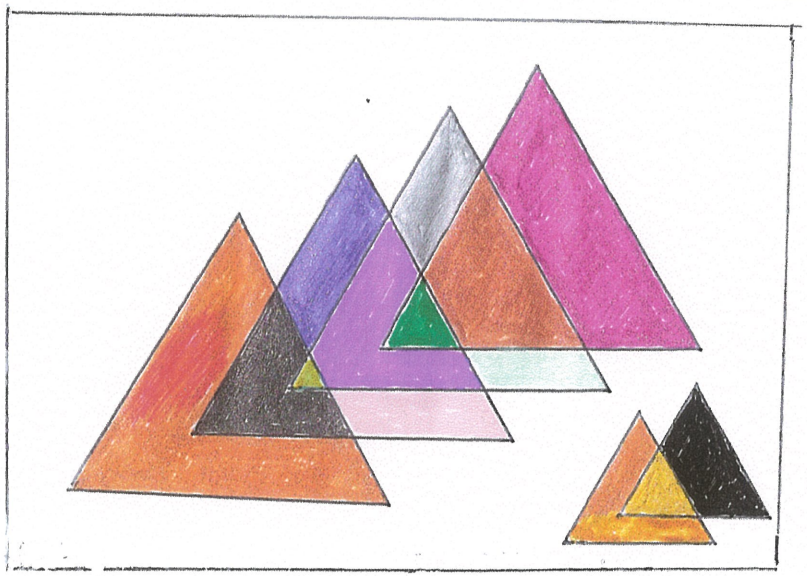
When selecting a stencil it is useful to obtain a sturdy one as flimsy stencils tend to move around when drawing.

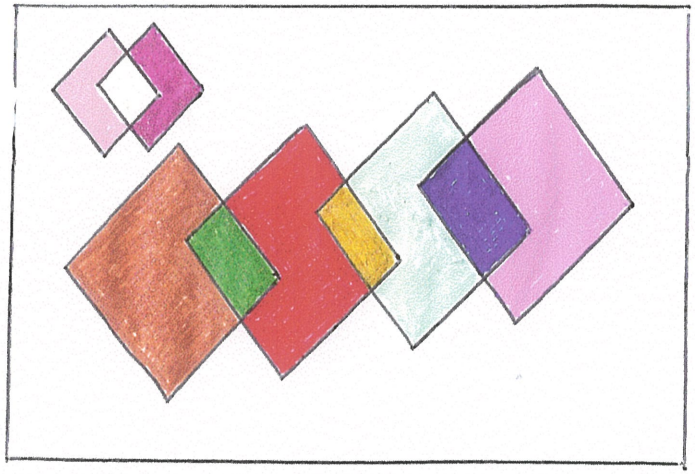
For drawing circles you may also use circular objects to draw round or a geometric compass with a sharp pencil. Some people may also wish to use tracing paper to copy and make drawings.

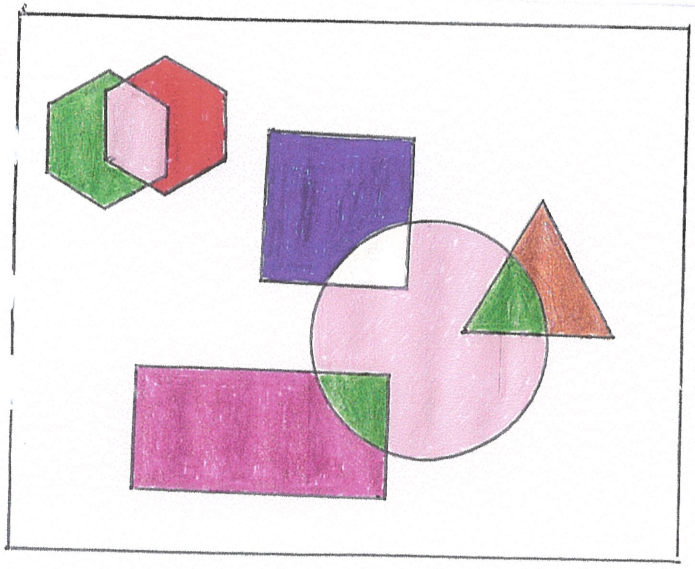
Other materials:

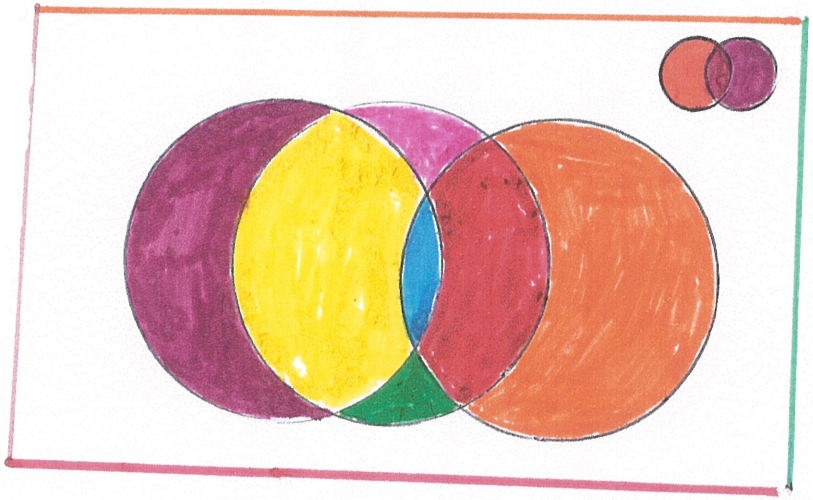
A4 white paper
pens and pencils (HB)
Frames for display of designs

Examples

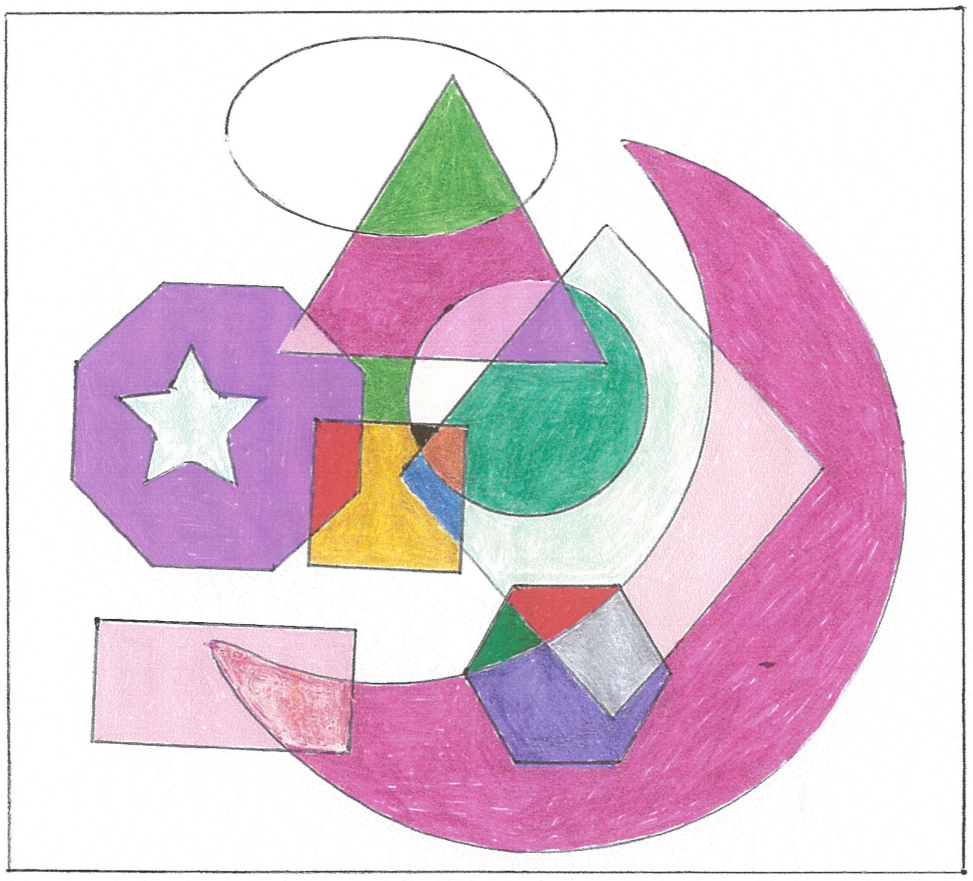




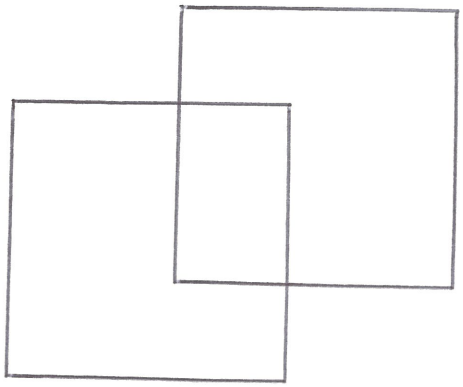




Example



Exercise



The diagram shows two overlapping squares.

On white paper, use your non dominant hand, a ruler and pencil or pen, to make a similar sketch of the diagram.

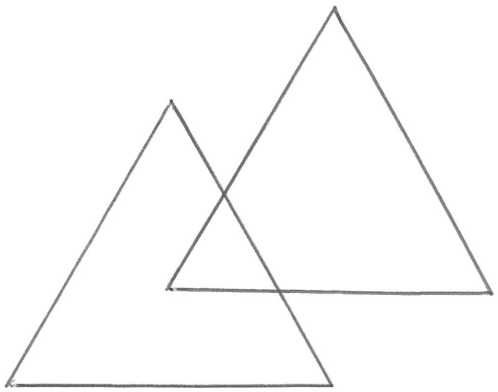
Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring devise by shading in the three areas in the diagram in different colours.

Well done! You have now completed your first non dominant hand coloured design using overlapping mathematical shapes.

Keep all your designs together safely so that you can later combine some of them to form beautiful art works like the ones illustrated earlier in this resource.

You may later wish to frame your designs and diplay them in a prominent place.

Exercise

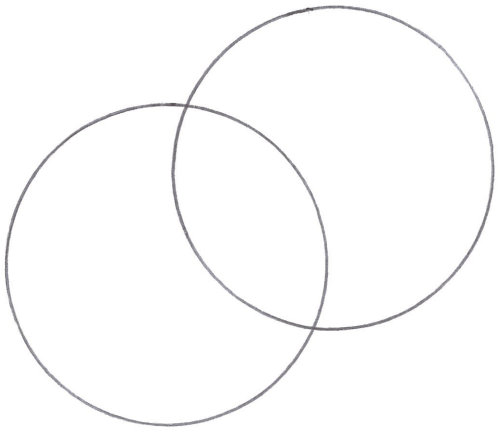


The diagram shows two overlapping triangles.

On white paper, use your non dominant hand, a ruler and pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the three areas in the diagram in three different colours.

Exercise

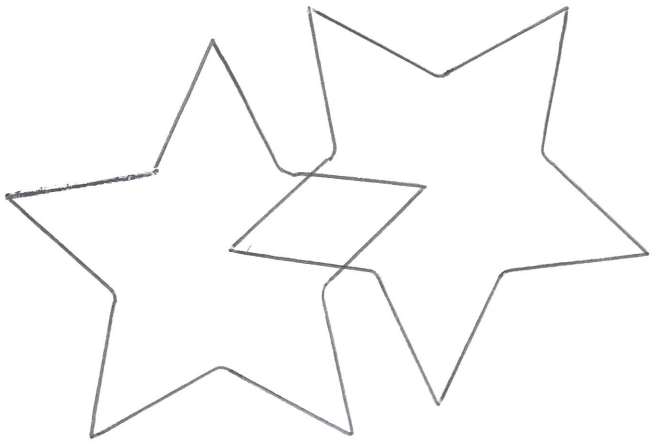


The diagram shows two overlapping circles.

On white paper, use your non dominant hand, a ruler and pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the three areas in the diagram in three different colours.

Exercise

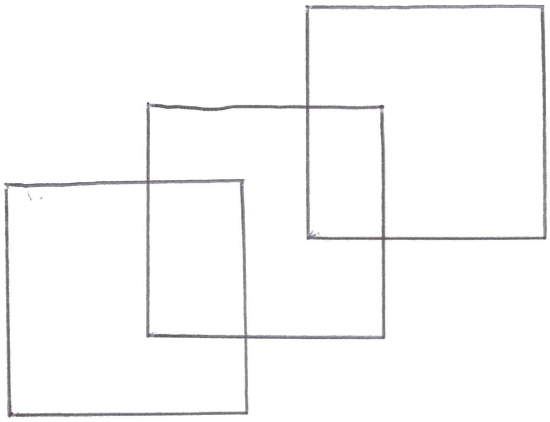


The diagram shows two overlapping stars.

On white paper, use your non dominant hand, a ruler and pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the three areas in the diagram in three different colours.

Exercise

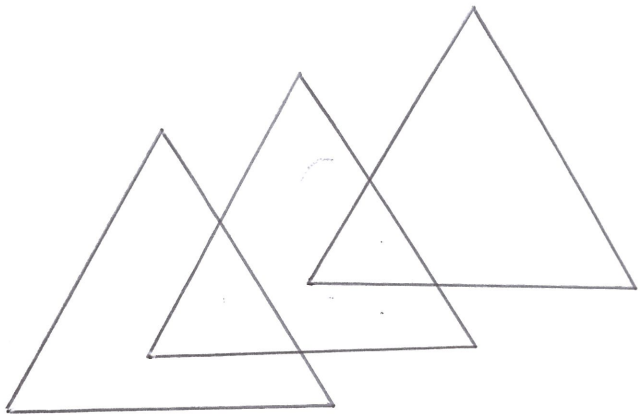


The diagram shows three overlapping squares.

On white paper, use your non dominant hand, a ruler and pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the five areas in the diagram in five different colours.

Exercise

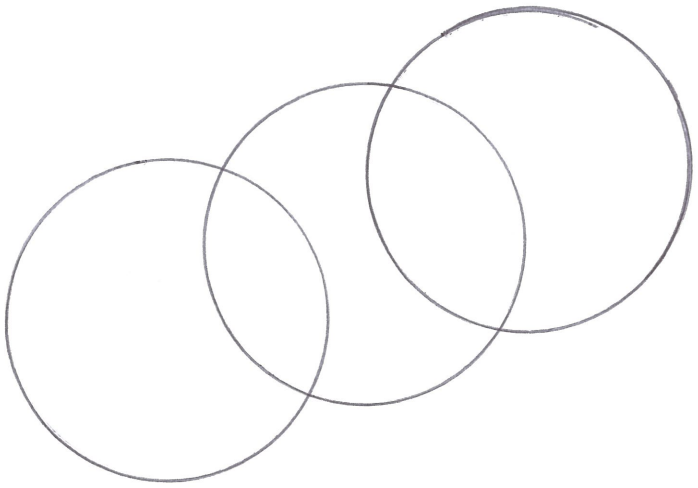


The diagram shows three overlapping triangles.

On white paper, use your non dominant hand, a ruler and pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the five areas in the diagram in five different colours.

Exercise

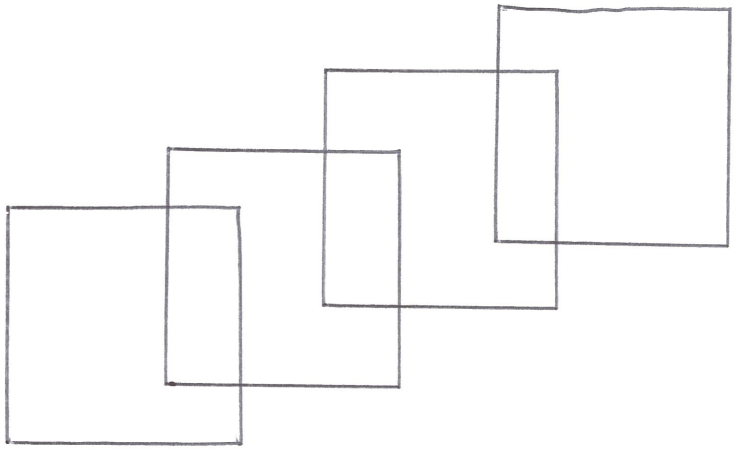


The diagram shows three overlapping circles.

On white paper, use your non dominant hand, a ruler and pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the five areas in the diagram in five different colours.

Exercise

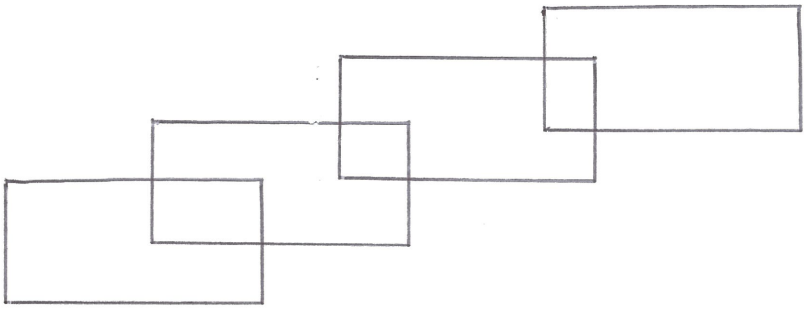


The diagram shows four overlapping squares.

On white paper, use your non dominant hand, a ruler and a pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the seven areas in the diagram in 7 different colours.

Exercise

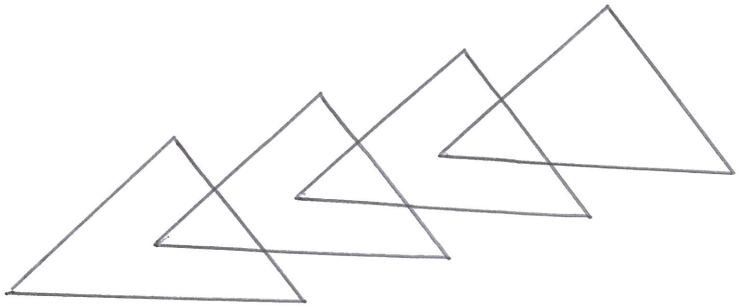


The diagram shows four overlapping rectangles.

On white paper, use your non dominant hand, a ruler and a pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the seven areas in the diagram in 7 different colours.

Exercise

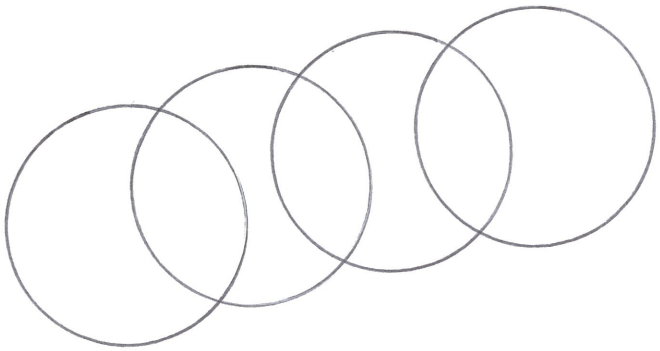


The diagram shows four overlapping triangles.

On white paper, use your non dominant hand, a ruler and a pencil or pen to make a similar sketch of the diagram.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the seven areas in the diagram in 7 different colours.

Exercise

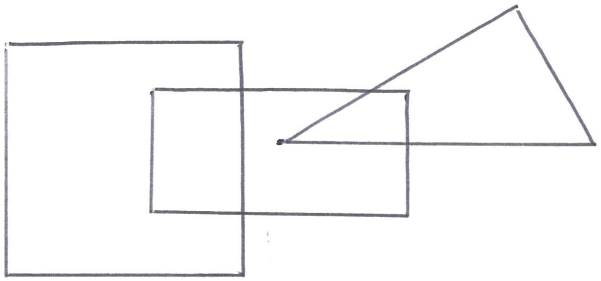


The diagram shows four overlapping circles.

On white paper, use a circular object like a circular lid to make a sketch of the four circles. Or you can use a compass or a stencil with a pencil or pen to draw the circles.
Use your non dominant hand to make the sketch.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the seven areas in the diagram in 7 different colours.

Exercise

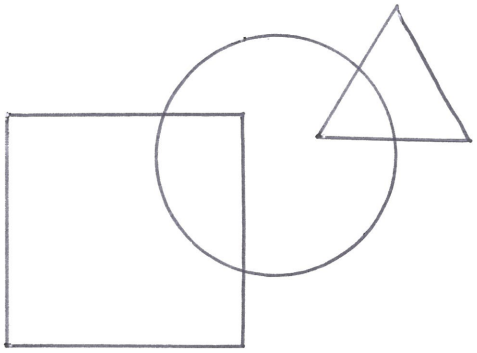


The diagram shows three overlapping shapes.

On white paper, using your non dominant hand, make a sketch of the diagram using a ruler, pencil or pen.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the five areas in the diagram in five different colours.

Exercise

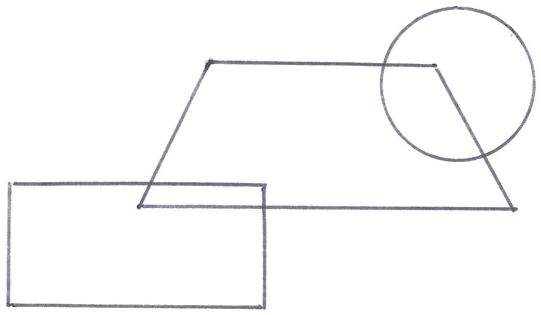


The diagram shows three overlapping shapes.

On white paper, using your non dominant hand, make a sketch of the diagram using a ruler, pencil or pen.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the five areas in the diagram in five different colours.

Exercise

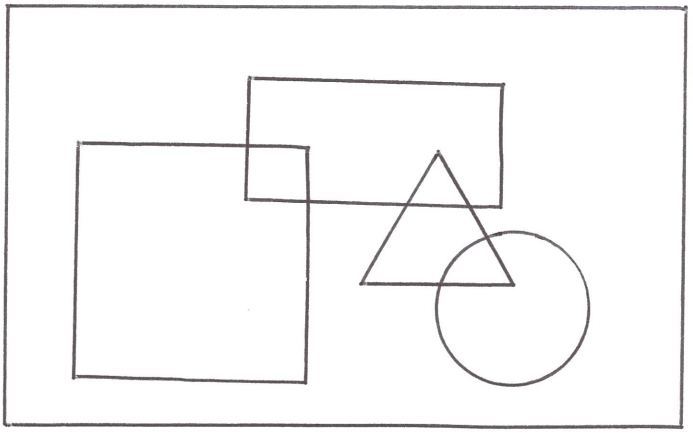


The diagram shows three overlapping shapes.

On white paper, using your non dominant hand, make a sketch of the diagram using a ruler, pencil or pen.

Using your non dominant hand again, complete your design using coloured pencils, felt pens or any other colouring method you wish to use, by shading in the five areas in the diagram in five different colours.

Exercise



The diagram shows four different and overlapping shapes.

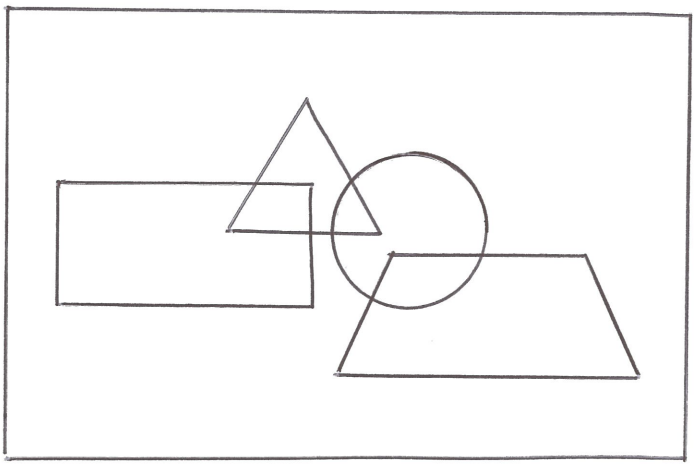
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the four overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows four different and overlapping shapes.

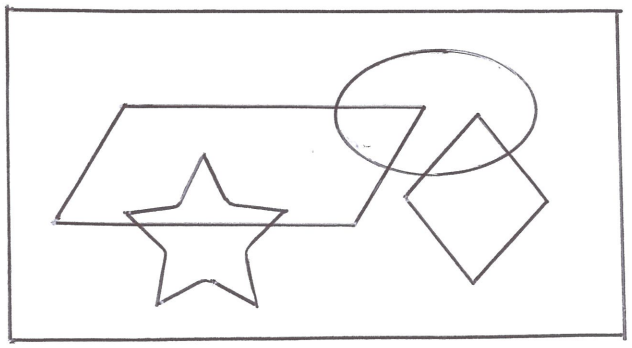
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the four overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows four different and overlapping shapes.

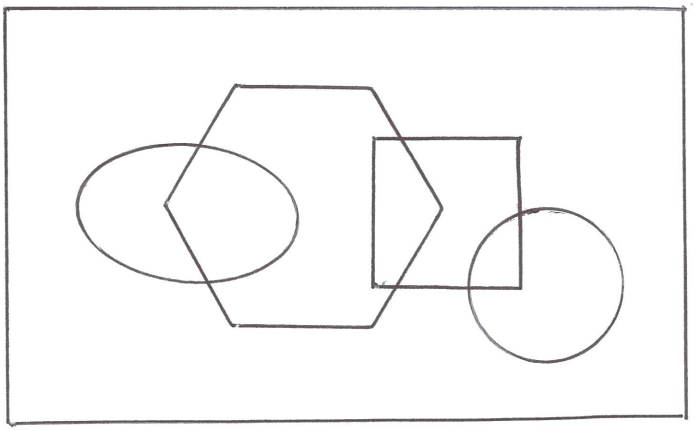
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the four overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows four different and overlapping shapes.

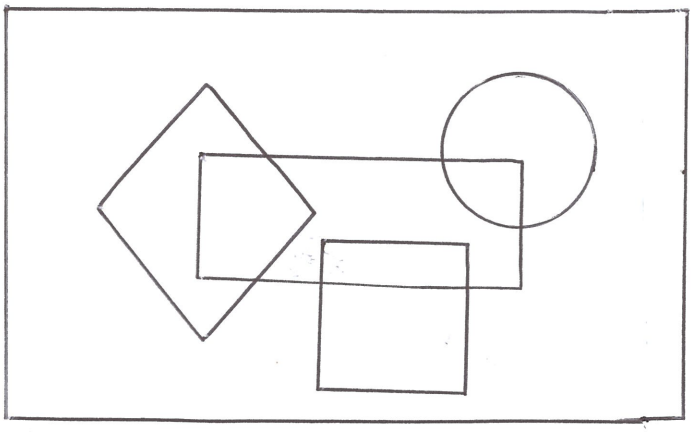
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the four overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows four different and overlapping shapes.

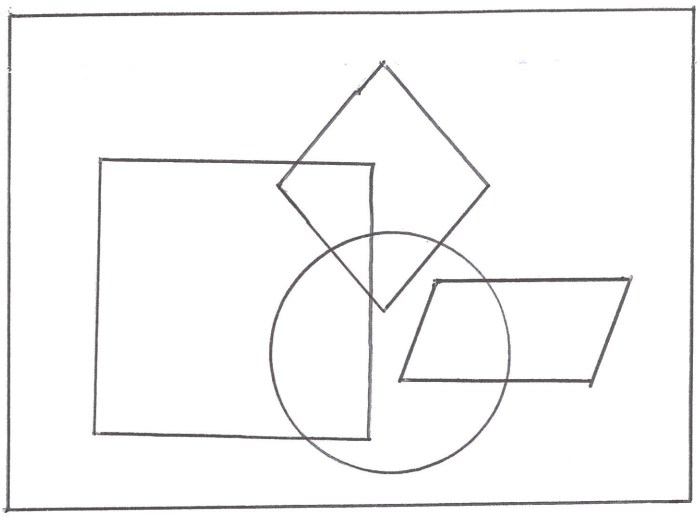
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the four overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows four different and overlapping shapes.

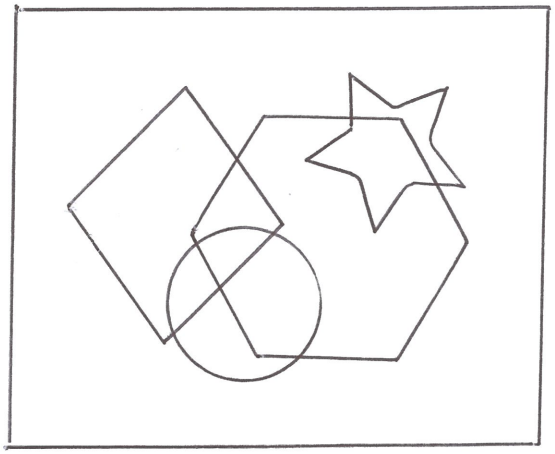
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the four overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows four different and overlapping shapes.

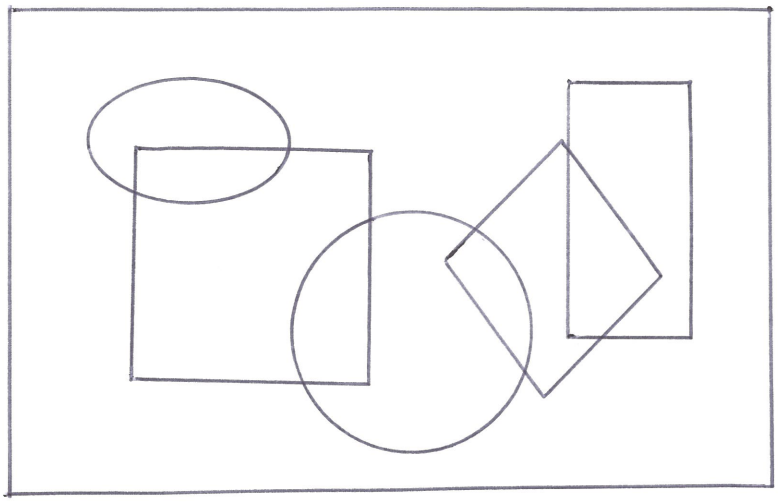
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the four overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows five different and overlapping shapes.

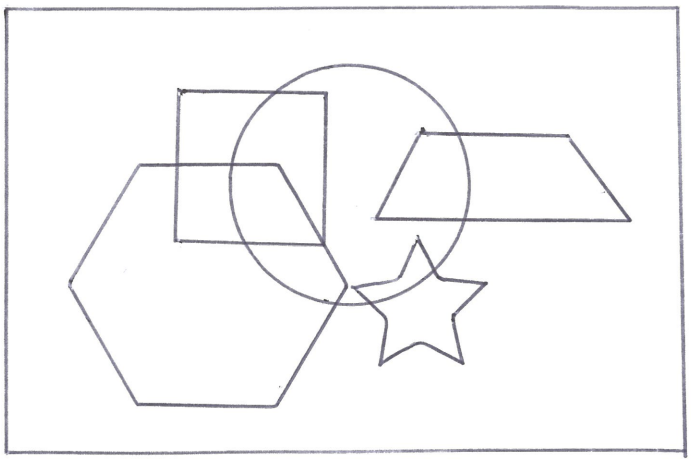
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the five overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows five different and overlapping shapes.

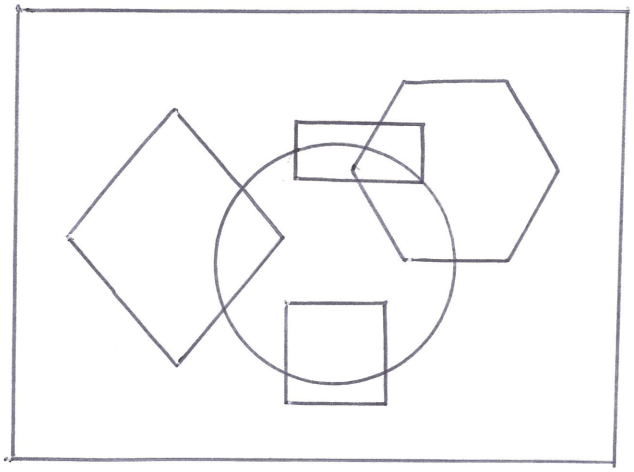
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the five overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows five different and overlapping shapes.

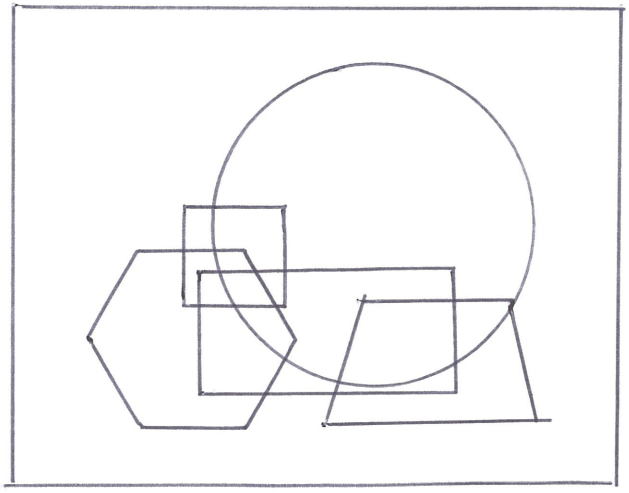
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the five overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows five different and overlapping shapes.

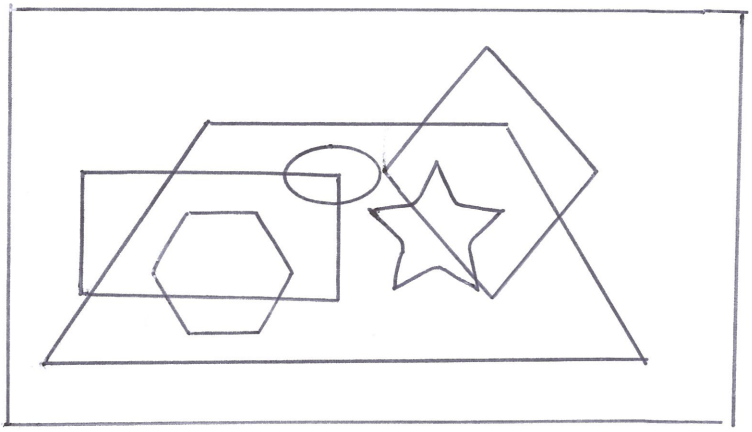
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the five overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows five different and overlapping shapes.

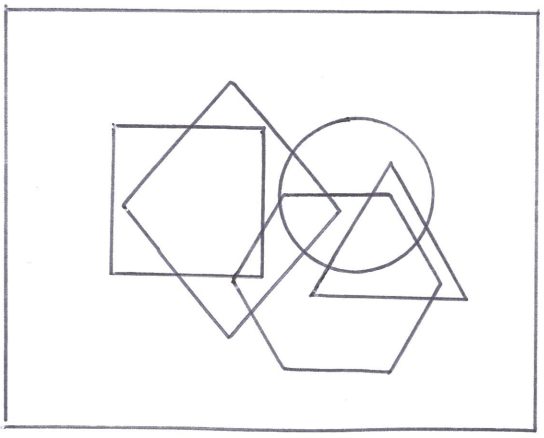
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the five overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows five different and overlapping shapes.

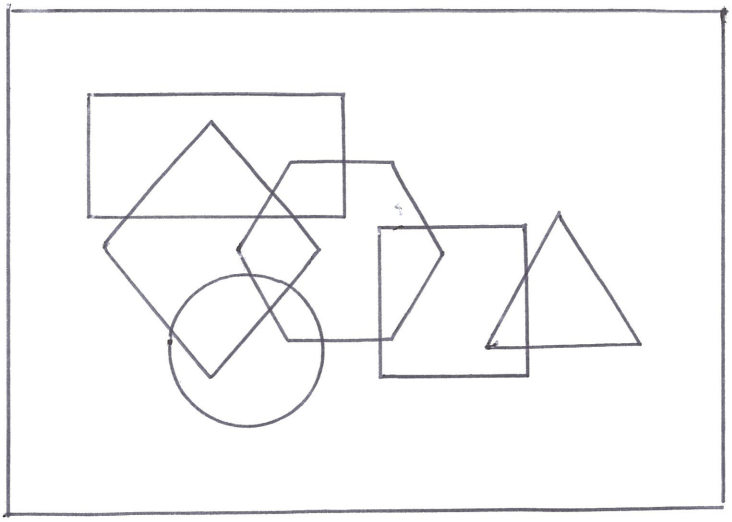
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the five overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows six different and overlapping shapes.

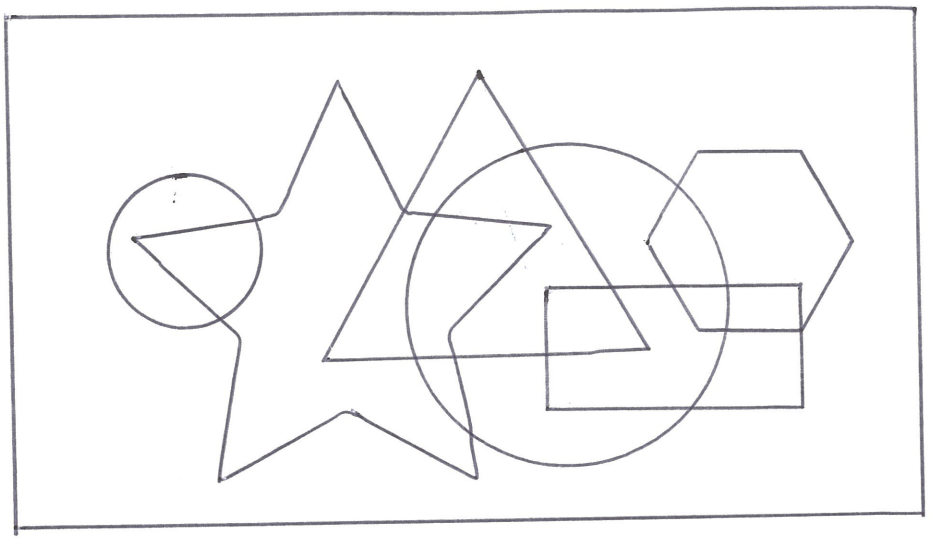
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the six overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows six different and overlapping shapes.

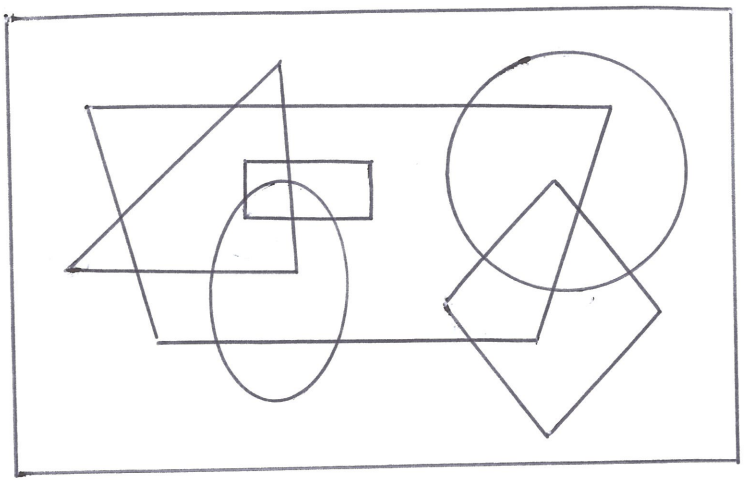
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the six overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows six different and overlapping shapes.

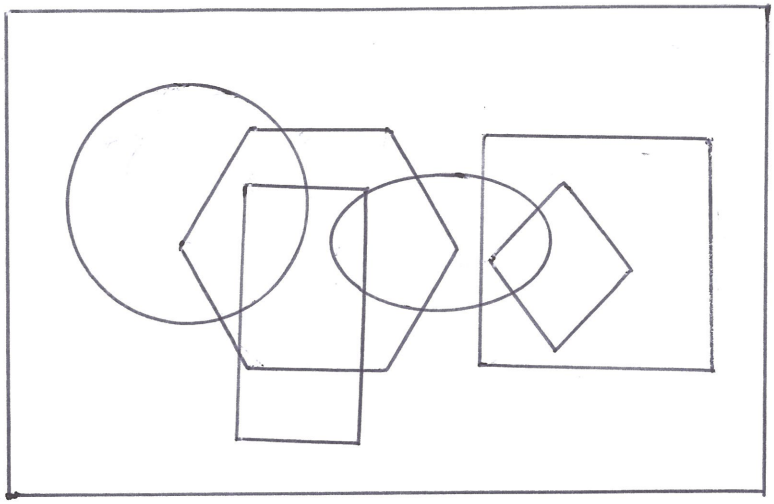
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the six overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows six different and overlapping shapes.

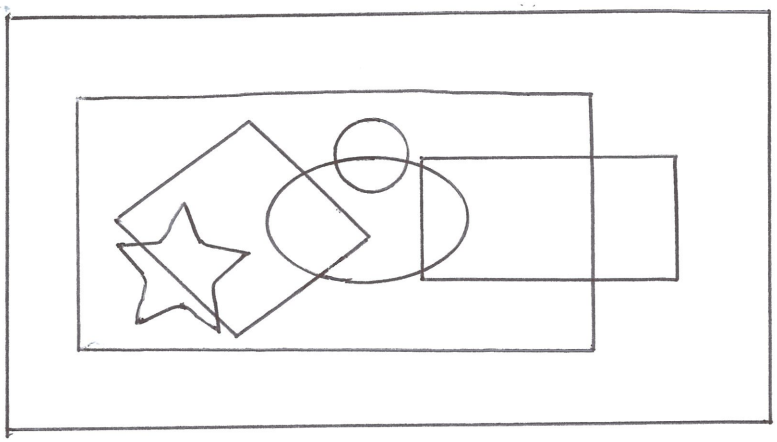
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the six overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows six different and overlapping shapes.

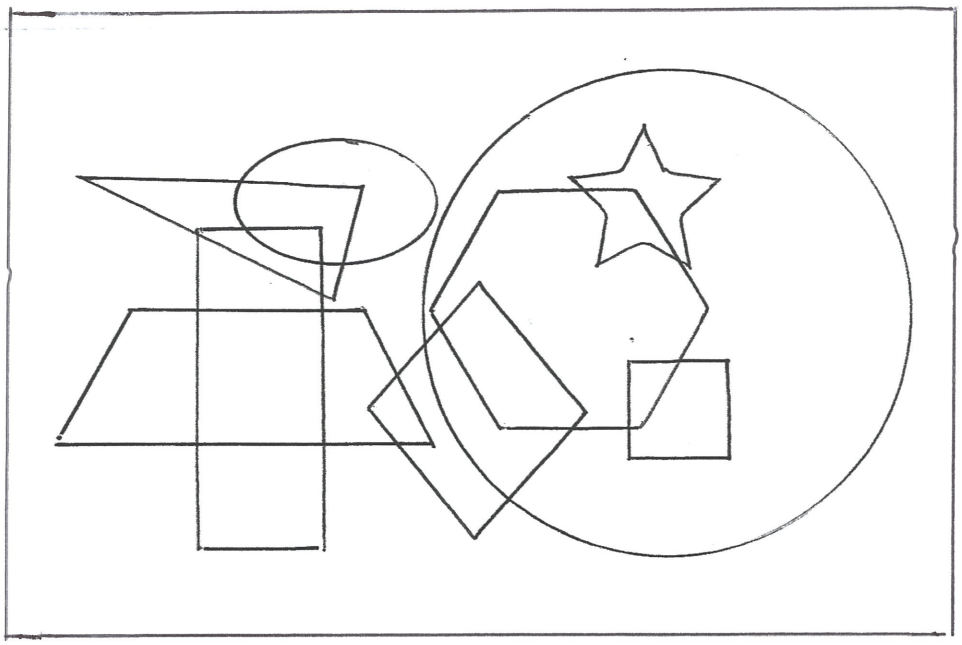
On white paper, using your non dominant hand, a ruler and pencil or pen, or a geometric shapes stencil, make a similar sketch of the diagram.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method you prefer, by shading in the areas in the design created by the overlapping shapes.

Name the six overlapping shapes in your design.

Draw a border round the design as shown in the diagram.

Exercise



The diagram shows a number of overlapping shapes.

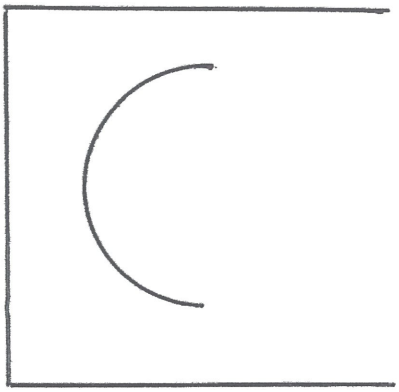
On white paper, use your non dominant hand, a geometric shapes stencil, a pencil or pen to make a similar sketch.

Using your non dominant hand again, complete the design using coloured pencils, felt pens or any other colouring method by shading in all the spaces created by the overlapping shapes in the diagram in different colours.

Count the number of different overlapping shapes in the diagram and name them.

Chapter 24 Missing links

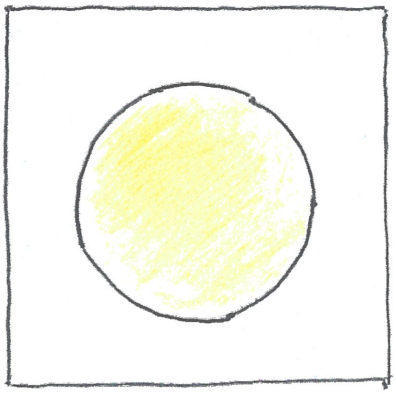
Brain task



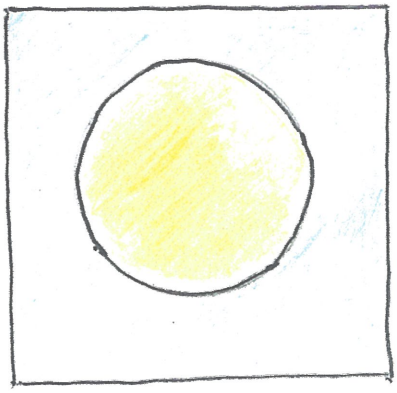
Author's attempt!

In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square and the circle.

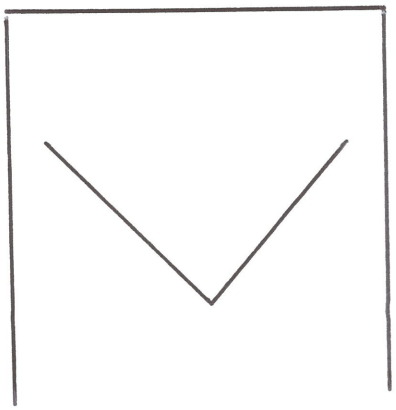
Use your **usual hand** to shade in the circle in yellow and the remainder of the diagram in blue.



In the space below repeat the above exercises using your **unusual hand**.



Brain task

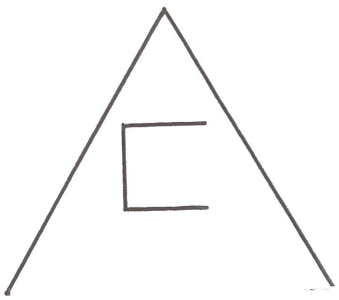


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square and the triangle.

Use your **usual hand** to shade in the triangle in green and the remainder of the diagram in blue.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

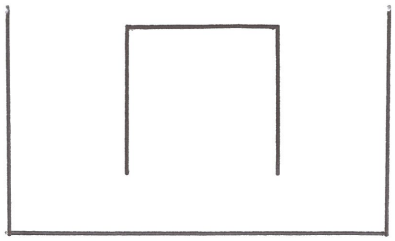


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the triangle and the square.

Use your **usual hand** to shade in the square in blue and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

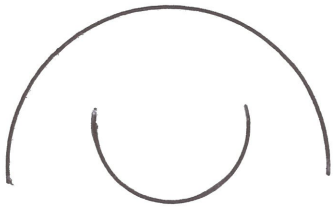


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the rectangle and the square.

Use your **usual hand** to shade in the square in black and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

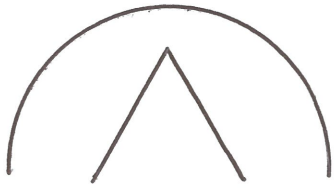


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the two circles.

Use your **usual hand** to shade in the small circle in green and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

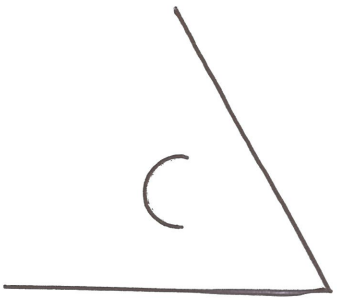


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the triangle and the circle.

Use your **usual hand** to shade in the triangle in blue and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

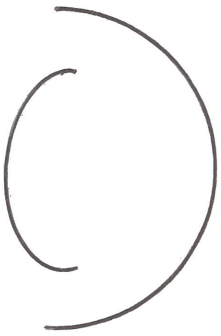


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the circle and the triangle.

Use your **usual hand** to shade in the circle in black and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

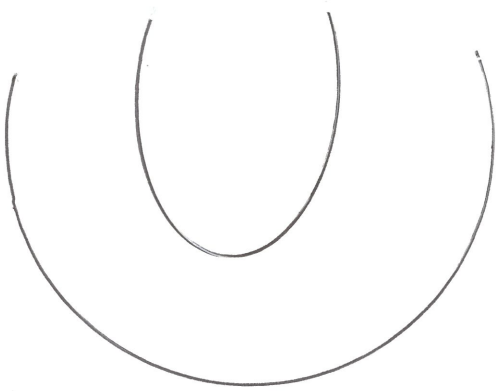


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the ellipse and the circle.

Use your **usual hand** to shade in the ellipse in green and the remainder of the diagram in blue.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

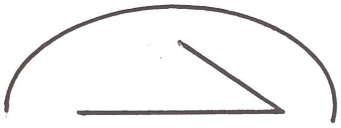


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the circle and the ellipse.

Use your **usual hand** to shade in the circle in green and the remainder of the diagram in blue.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

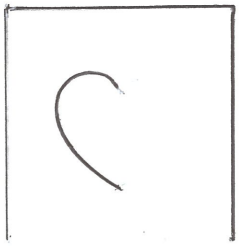


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the triangle and the ellipse.

Use your **usual hand** to shade in the triangle in red and the remainder of the diagram in green.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

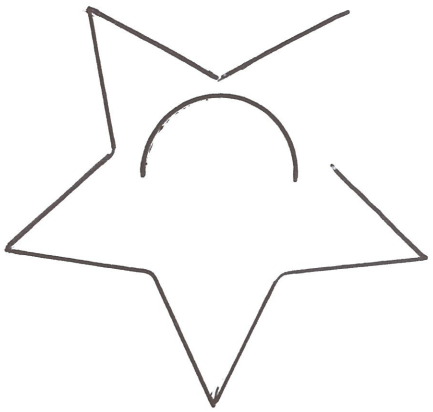


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the heart and the square.

Use your **usual hand** to shade in the heart in yellow and the remainder of the diagram in blue.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

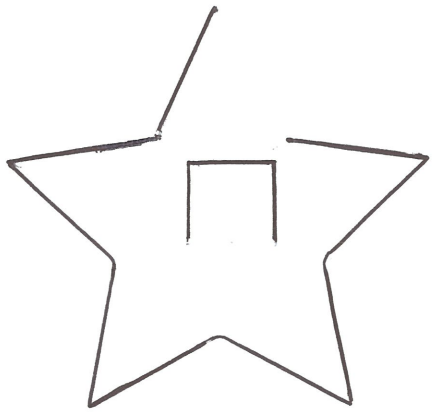


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the star and the circle.

Use your **usual hand** to shade in the circle in red and the remainder of the diagram in green.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

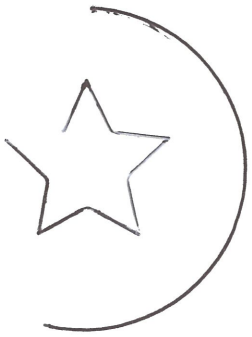


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square and the star.

Use your **usual hand** to shade in the square in red and the remainder of the diagram in green.

In the space below repeat the above exercises using your **unusual hand**.

Brain task



In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the circle and the star.

Use your **usual hand** to shade in the star in red and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

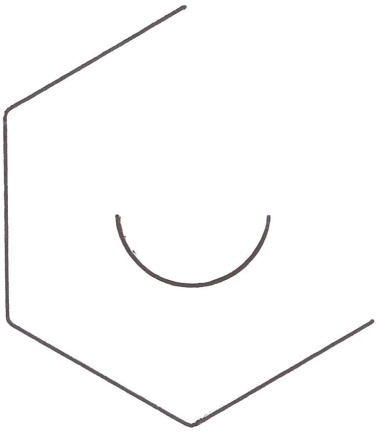
Brain task

In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the star and the triangle.

Use your **usual hand** to shade in the star in blue and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task :

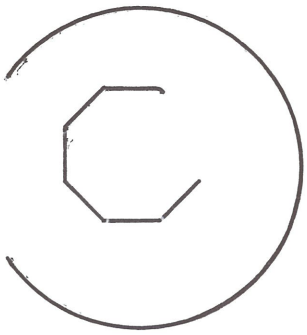


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the polygon and the circle.

Use your **usual hand** to shade in the circle in red and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

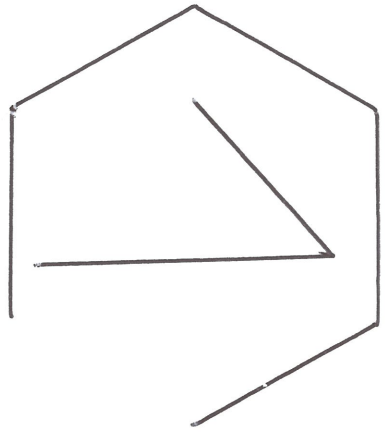


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the circle and the polygon

Use your **usual hand** to shade in the polygon in yellow and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

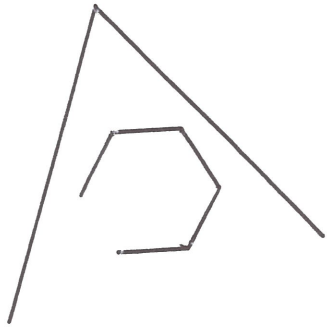


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the polygon and the triangle.

Use your **usual hand** to shade in the triangle in blue and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

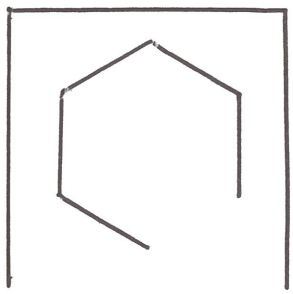


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the triangle and the polygon

Use your **usual hand** to shade in the polygon in red and the remainder of the diagram in green.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

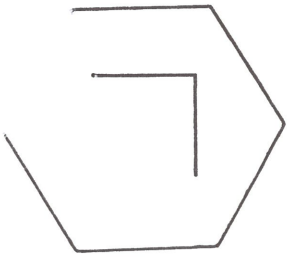


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square and the polygon

Use your **usual hand** to shade in the polygon in yellow and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

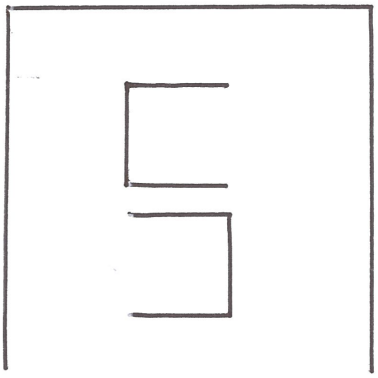


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the polygon and the square.

Use your **usual hand** to shade in the square in blue and the remainder of the diagram in green.

In the space below repeat the above exercises using your **unusual hand**.

Brain task



In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the large square and the two small squares.

Use your **usual hand** to shade in the small squares in blue and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

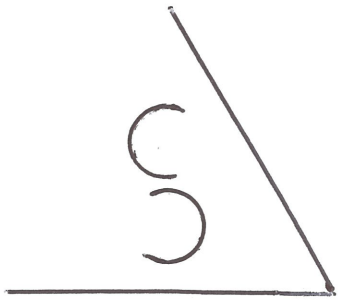
Brain task

In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the circle and the two triangles.

Use your **usual hand** to shade in the triangles in red and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

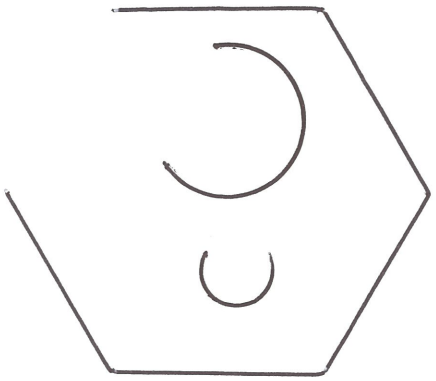


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the triangle and the two circles.

Use your **usual hand** to shade in the circles in black and the remainder of the diagram in green.

In the space below repeat the above exercises using your **unusual hand**.

Brain task



In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the polygon and the two circles.

Use your **usual hand** to shade in the two circles in yellow and the remainder of the diagram in green.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the ellipse and the two triangles.

Use your **usual hand** to shade in the two triangles in yellow and the remainder of the diagram in black.

In the space below repeat the above exercises using your **unusual hand**.

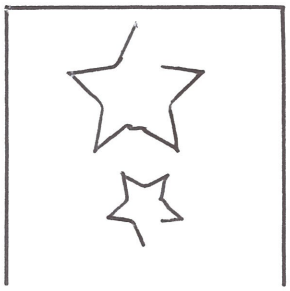
Brain task

In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the star and the two squares.

Use your **usual hand** to shade in the two squares in yellow and the remainder of the diagram in red.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

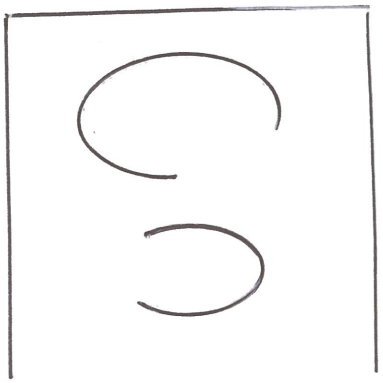


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square and the two stars.

Use your **usual hand** to shade in the two stars in red and the remainder of the diagram in blue.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

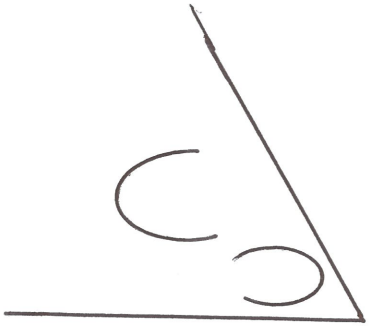


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square and the two ellipses.

Use your **usual hand** to shade in the two ellipses in blue and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

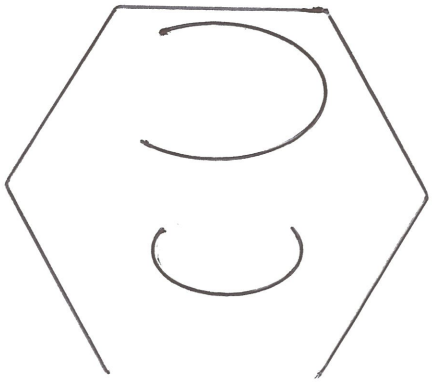


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the triangle and the two ellipses.

Use your **usual hand** to shade in the two ellipses in red and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

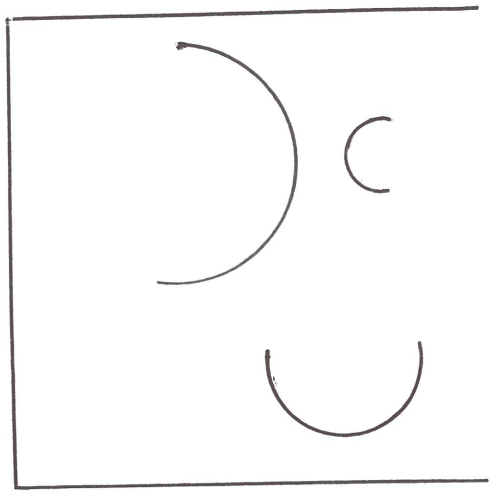


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the hexagon and the two ellipses.

Use your **usual hand** to shade in the two ellipses in green and the remainder of the diagram in yellow.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

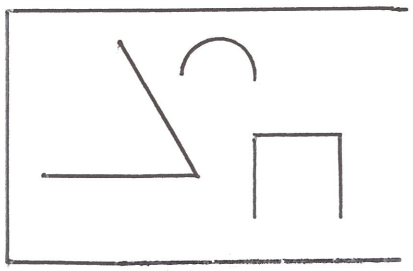


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square and the three circles.

Use your **usual hand** to shade in the circles in three different colours and the remainder of the diagram in another colour.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

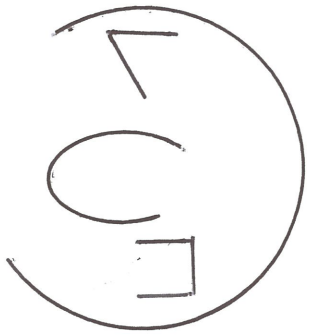


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the rectangle, the triangle, the circle and the square.

Use your **usual hand** to shade in the triangle, the circle and the square using different colours and the remainder of the diagram in another colour.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

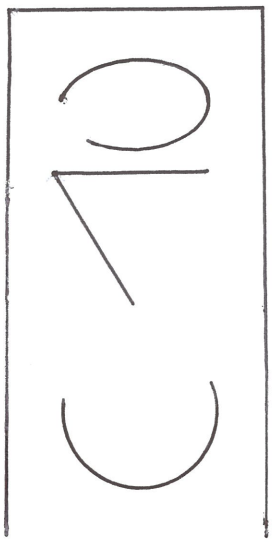


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the circle, the triangle, the ellipse and the square.

Use your **usual hand** to shade in the triangle, the ellipse and the square using different colours and the remainder of the diagram in another colour.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

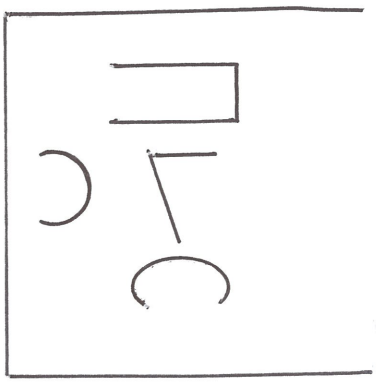


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the rectangle, the ellipse, the triangle and the circle.

Use your **usual hand** to shade in the ellipse, the triangle and the circle using different colours and the remainder of the diagram in another colour.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

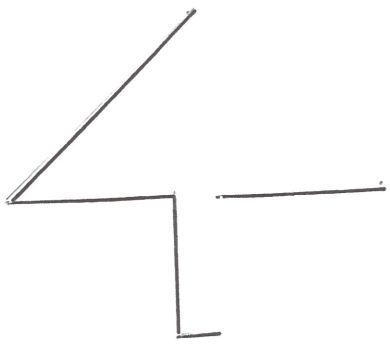


In the space below use your **usual hand** to make a sketch of this diagram and to add the missing lines (links) to complete the square, the rectangle, the circle, the triangle and the ellipse.

Use your **usual hand** to shade in the rectangle, the circle, the triangle and the ellipse using different colours and the remainder of the diagram in another colour.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

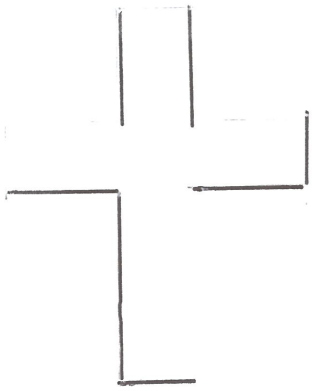


In the space below use your **usual hand** to make a sketch of this arrow diagram.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade it in using any colour.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

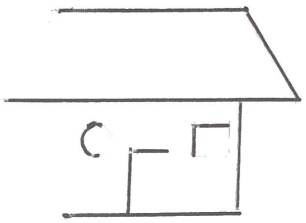


In the space below use your **usual hand** to make a sketch of this cross.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade it in using any colour.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

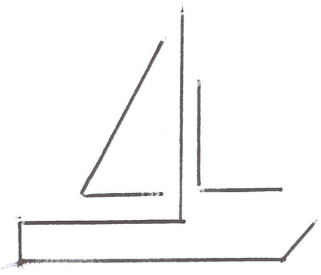


In the space below use your **usual hand** to make a sketch of this house.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade it in using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

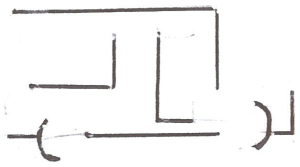


In the space below use your **usual hand** to make a sketch of this sailing boat.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade it in using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

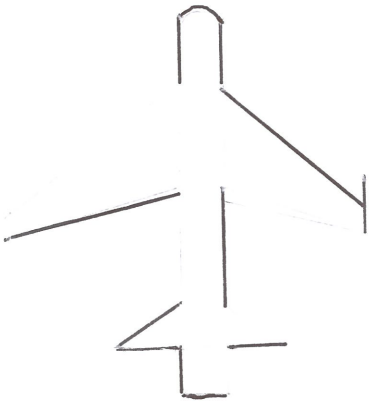


In the space below use your **usual hand** to make a sketch of this car.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade it in using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

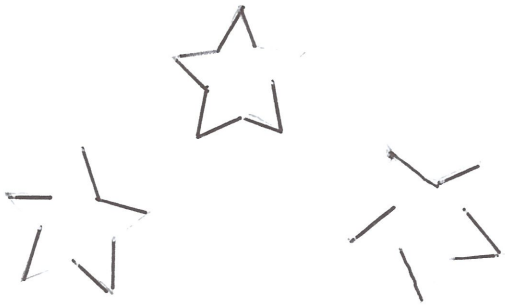


In the space below use your **usual hand** to make a sketch of this aeroplane.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade it in using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

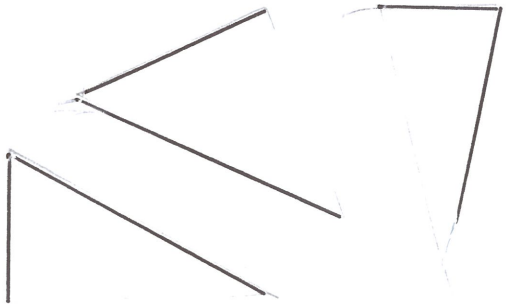


In the space below use your **usual hand** to make a sketch of these three stars.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade in the stars using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

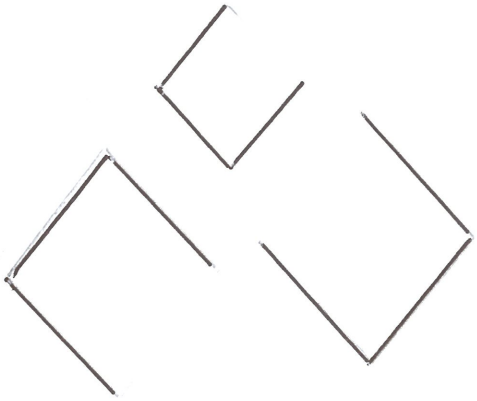


In the space below use your **usual hand** to make a sketch of these three triangles.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade in the triangles using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Brain task

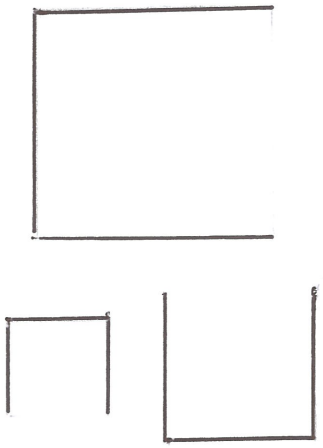


In the space below use your **usual hand** to make a sketch of these three diamonds.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade in the diamonds using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Brain task



In the space below use your **usual hand** to make a sketch of these three squares.
Complete your sketch by adding the missing lines.

Use your **usual hand** to shade in the squares using different colours.

In the space below repeat the above exercises using your **unusual hand**.

Attempting Neurobic exercises challenge the brain

You are what your brain does for you

Your brain loves a challenging task

Attempting Neurobic exercises combats memory loss

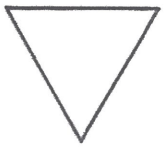
Chapter 25 Neurobic exercises

Sample session

Write down the word brain with your dominant hand.
Write down the word brain backwards with your dominant hand.
Write down the word brain with your non dominant hand.
Write down the word brain backwards with your non dominant hand.

Write down the number 983 with your dominant hand.
Write down the number 983 backwards with your dominant hand.
Write down the number 983 with your non dominant hand
Write down the number 983 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

Don't look a gift horse in the mouth.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session results!!

brain
niarb

brain
niarb

983
389
983
389

Don't look a gift horse in the mouth

htuom eht ni esrohtfig a kool t'noD

Don't look a gift horse in the mouth

htuom eht ni esrohtfig a kool t'noD

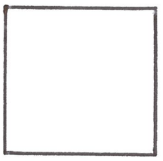
Proverb means: To show lack of appreciation when receiving a gift

Session 1

Write your full name with your dominant hand.
Write your full name backwards with your dominant hand.
Write your full name with your non dominant hand.
Write your full name backwards with your non dominant hand.

Write down the number 258 with your dominant hand.
Write down the number 258 backwards with your dominant hand.
Write down the number 258 with your non dominant hand.
Write down the number 258 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade it in with your dominant hand.

Make a rough sketch of the same diagram with your non dominant hand.
Shade it in with your non dominant hand.

Write down this proverb with your dominant hand:

A stitch in time saves nine.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

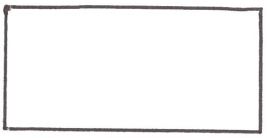
What does the proverb mean?

Session 2

Write down the word Neurobics with your dominant hand.
Write down the word Neurobics backwards with your dominant hand.
Write down the word Neurobics with your non dominant hand.
Write down the word Neurobics backwards with your non dominant hand.

Write down the number 643 with your dominant hand.
Write down the number 643 backwards with your dominant hand.
Write down the number 643 with your non dominant hand.
Write down the number 643 backwards with your non dominant and.

Make a rough sketch of this diagram with your dominant hand.



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

The pen is mightier than the sword.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

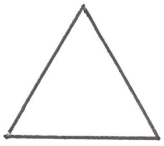
What does the proverb mean?

Session 3

Write down the word brainpower with your dominant hand.
Write down the word brainpower backwards with your dominant hand.
Write down the word brainpower with your non dominant hand.
Write down the word brainpower backwards with your non dominant hand.

Write down the number 853 with your dominant hand.
Write down the number 853 backwards with your dominant hand.
Write down the number 853 with your non dominant hand.
Write down the number 853 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram using your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram using your non dominant hand.

Write down this proverb using your dominant hand:

A bird in hand is worth two in the bush.

Write down the proverb backwards using your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

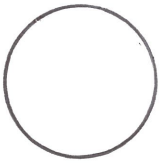
What does the proverb mean?

Session 4

Write down the word remembering with your dominant hand.
Write down the word remembering backwards with your dominant hand.
Write down the word remembering with your non dominant hand.
Write down the word remembering backwards with your non dominant hand.

Write down the number 927 with your dominant hand.
Write down the number 927 backwards with your dominant hand.
Write down the number 927 with your non dominant hand.
Write down the number 927 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram using your non dominant hand.
Shade in the diagram using your non dominant hand.

Write down this proverb using your dominant hand:

Absence makes the heart grow fonder.

Write down the proverb backwards using your dominant hand.
Write down the proverb using their non dominant hand.
Write down th proverb backwards using you non dominant hand.

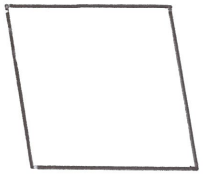
What does the proverb mean?

Session 5

Write down the word intelligent with your dominant hand.
Write down the word intelligent backwards with your dominant hand.
Write down the word intelligent with your non dominant hand.
Write down the word intelligent backwards with your non dominant hand.

Write down the number 953 with your dominant hand.
Write down the number 953 backwards with your dominant hand.
Write down the number 953 with your non dominant hand.
Write down the number 953 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram using your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb using your dominant hand:

A cat has nine lives.

Write down the proverb backwards using your dominant hand.
Write down the proverb using your non dominant hand.
Write down the proverb backwards using your non dominant hand.

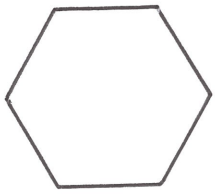
What does the proverb mean?

Session 6

Write down the word judgment with your dominant hand.
Write down the word judgment backwards with your dominant hand.
Write down the word judgment with your non dominant hand.
Write down the word judgment backwards with your non dominant hand.

Write down the number 926 with your dominant hand.
Write down the number 926 backwards with your dominant hand.
Write down the number 926 with your non dominant hand.
Write down the number 926 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

A chain is only as strong as its weakest link.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 7

Write down the word consciousness with your dominant hand.
Write down the word consciousness backwards with your dominant hand.
Write down the word consciousness with your non dominant hand.
Write down the word consciousness backwards with your non dominant hand.

Write down the number 529 with your dominant hand.
Write down the number 529 backwards with your dominant hand.
Write down the number 529 with your non dominant hand.
Write down the number 529 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:

Shade in the diagram using your dominant hand.
Make a rough sketch of the diagram using your non dominant hand.
Shade in the diagram using your non dominant hand.

Write down this proverb using your dominant hand:

A drowning man will clutch at a straw.

Write down the proverb backwards using your dominant hand.
Write down the proverb using your non dominant hand.
Write down the proverb backwards using your non dominant hand.

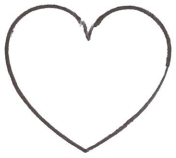
What does the proverb mean?

Session 8

Write down the word perception with your dominant hand.
Write down the word perception backwards with your dominant hand
Write down the word perception with your non dominant hand.
Write down the word perception backwards with your non dominant hand.

Write down the number 903 with your dominant hand.
Write down the number 903 backwards with your dominant hand.
Write down the number 903 with your non dominant hand.
Write down the number 903 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

A fool and his money are soon parted.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

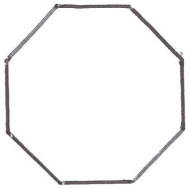
What does the proverb mean?

Session 9

Write down the word astuteness with your dominant hand.
Write down the word astuteness backwards with your dominant hand.
Write down the word astuteness with your non dominant hand.
Write down the word astuteness backwards with your non dominant hand.

Write down the number 987 with your dominant hand.
Write down the number 987 backwards with your dominant hand.
Write down the number 987 with your non dominant hand.
Write down the number 987 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

A leopard never changes its spots.

Write down the proverb backwards using your dominant hand.
Write down the proverb using your non dominant hand.
Write down the proverb backwards using your non dominant hand.

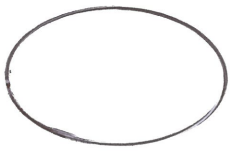
What does the proverb mean?

Session 10

Write down the word alertness with your dominant hand.
Write down the word alertness backwards with your dominant hand.
Write down the word alertness with your non dominant hand.
Write down the word alertness backwards with your non dominant hand.

Write down the number 6295 with your dominant hand.
Write down the number 6295 backwards with your dominant hand.
Write down the number 6259 with your non dominant hand.
Write down the number 6259 backwards with your non dominant hand.

Make a rough sketch of this diagram using your dominant hand:



Shade in the diagram using your dominant hand.
Make a rough sketch of the diagram using your non dominant hand.
Shade in the diagram using your non dominant hand.

Write down this proverb using your dominant hand:

Action speaks louder than words.

Write down the proverb backwards using your dominant hand.
Write down the proverb using your non dominant hand.
Write down the proverb backwards using your non dominant hand.

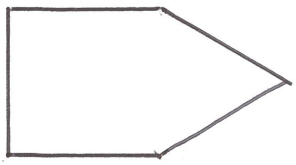
What does the proverb mean?

Session 11

Write down the word mentality with your dominant hand.
Write down the word mentality backwards with your dominant hand.
Write down the word mentality with your non dominant hand.
Write down the word mentality backwards with your non dominant hand.

Write down the number 4678 with your dominant hand.
Write down the number 4678 backwards with your dominant hand.
Write down the number 4678 with your non dominant hand.
Write down the number 4678 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

A bad worker always blames his tools.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

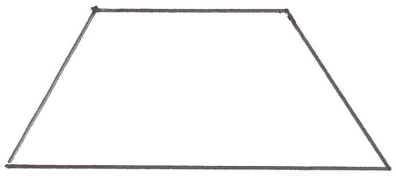
What does the proverb mean?

Session 12

Write down the word brilliance with your dominant hand.
Write down the word brilliance backwards with your dominant hand.
Write down the word brilliance with your non dominant hand.
Write down the word brilliance backwards with your non dominant hand.

Write down the number 6297 with your dominant hand.
Write down the number 6297 backwards with your dominant hand.
Write down the number 6297 with your non dominant hand.
Write down the number 6297 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

Adversity and loss make a man or woman wise

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

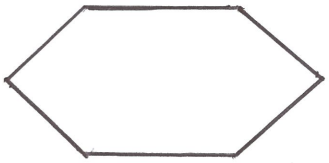
What does the proverb mean?

Session 13

Write down the word motivation with your dominant hand.
Write down the word motivation backwards with your dominant hand.
Write down the word motivation with your non dominant hand.
Write down the word motivation backwards with your non dominant hand.

Write down the number 5198 with your dominant hand.
Write down the number 5198 backwards with your dominant hand.
Write down the number 5198 with your non dominant hand.
Write down the number 5198 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

A journey of a thousand miles begins with a single step.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

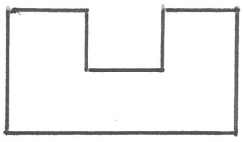
What does the proverb mean?

Session 14

Write down the word determined with your dominant hand.
Write down the word determined backwards with your dominant hand.
Write down the word determined with your non dominant hand.
Write down the word determined backwards with your non dominant hand.

Write down the number 3928 with your dominant hand.
Write down the number 3928 backwards with your dominant hand.
Write down the number 3928 with your non dominant hand.
Write down the number 3928 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

All good things come to an end.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

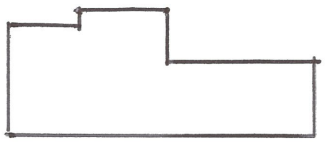
What does the proverb mean?

Session 15

Write down the word enlightened with your dominant hand.
Write down the word enlightened backwards with your non dominant hand.
Write down the word enlightened with your non dominant hand.
Write down the word enlightened backwards with your non dominant hand.

Write down the number 4286 with your dominant hand.
Write down the number 4286 backwards with your dominant hand.
Write down the number 4286 with your non dominant hand.
Write down the number 4286 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

All that glitters is not gold.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

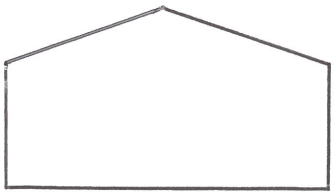
What does the proverb mean?

Session 16

Write down the word happiness with your dominant hand.
Write down the word happiness backwards with your dominant hand.
Write down the word happiness with your non dominant hand.
Write down the word happiness backwards with your non dominant hand.

Write down the number 5398 with your dominant hand.
Write down the number 5398 backwards with your dominant hand.
Write down the number 5398 with your non dominant hand.
Write down the number 5398 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

All is fair in love and war.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

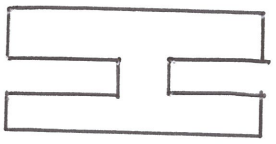
What does the proverb mean?

Session 17

Write down the word exploration with your dominant hand.
Write down the word exploration backwards with your dominant hand.
Write down the word exploration with your non dominant hand.
Write down the word exploration backwards with your non dominant hand.

Write down the number 3965 with your dominant hand.
Write down the number 3965 backwards with your dominant hand.
Write down the number 3965 with your non dominant hand.
Write down the number 3965 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

Always put your best foot forward.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

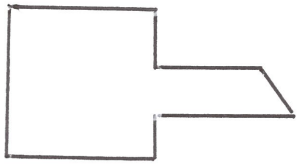
What does the proverb mean?

Session 18

Write down the word willingness with your dominant hand.
Write down the word willingness backwards with your dominant hand.
Write down the word willingness with your non dominant hand.
Write down the word willingness backwards with your non dominant hand.

Write down the number 5297 with your dominant hand.
Write down the number 5297 backwards with your dominant hand.
Write down the number 5297 with your non dominant hand.
Write down the number 5297 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

Among the blind the on-eyed man is king.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

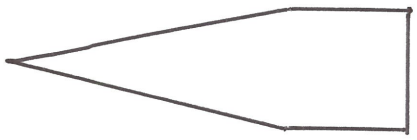
What does the proverb mean?

Session 19

Write down the word progressive with your dominant hand.
Write down the word progressive backwards with your dominant hand.
Write down the word progressive with your non dominant hand.
Write down the word progressive backwards with your non dominant hand.

Write down the number 2975 with your dominant hand.
Write down the number 2975 backwards with your dominant hand.
Write down the number 2975 with your non dominant hand.
Write down the number 2975 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand:



Shade in the diagram with your dominant hand.
Make a rough sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb with your dominant hand:

An apple a day keeps the doctor away.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

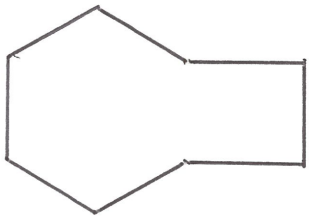
What does the proverb mean?

Session 20

Write down the word awareness using your dominant hand.
Write down the word awareness backwards using your dominant hand.
Write down the word awareness with your non dominant hand.
Write down the word awareness backwards with your non dominant hand.

Write down the number 3957 with your dominant hand.
Write down the number 3975 backwards with your dominant hand.
Write down the number 3975 with your non dominant hand.
Write down the number 3975 backwards with your non dominant hand.

Make a rough sketch of this diagram with your dominant hand.



Shade in the diagram with your dominant hand.
Make a sketch of the diagram with your non dominant hand.
Shade in the diagram with your non dominant hand.

Write down this proverb using your dominant hand:

An idle brain is the devil's workshop.

Write down the proverb backwards using your dominant hand.
Write down the proverb using your non dominant hand.
Write down the proverb backwards using your non dominant hand.

What does the proverb mean?

Session 21

Make a rough sketch of this stick man with your dominant hand:

Make a rough sketch of the stick man with your non dominant hand.

Write down this series of numbers including the missing number with your dominant hand: 3, 5, 7, - , 11 , 13 , 15

Write the series of numbers backwards with your dominant hand.
Write down the numbers backwards with your non dominant hand.

What day of the week do these letters form when written backwards: YADNOM? Print your answer with your dominant hand and then your non dominant hand.

What large number do these numbers form when written backwards: 627534? Write down your answer with your dominant hand and then with your non dominant hand.

Write down this proverb with your dominant hand:

A picture is worth a thousand words.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 22

Make a rough sketch of this stick man with your dominant hand:

Make a rough sketch of the stick man with your non dominant hand.

Write down this series of numbers including the missing number with your dominant hand: 2, 5, 8, 11 , - , 17 , 20 , 23.
Write the series of numbers backwards with your non dominant hand.

What month of the year do these letters form when written backwards: REBMEVON? Print your answer with your dominant hand and then your non dominant hand.

What large number do these numbers form when written backwards: 106753? Write down your answer with your dominant hand and then your non dominant hand.

Write down this proverb with your dominant hand:

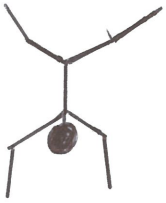
A rolling stone gathers no moss.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 23

Make a rough sketch of this stick man with your dominant hand:



Make a rough sketch of the stick man with your non dominant hand.

Write down this series of numbers including the missing number with you dominant hand: 1, 4, 7, 10, - , 16, 19, 22
Write down the series of numbers with your non dominant hand.

What month of the year do these letters form when written backwards: YRAUNAJ? Print your answer with your dominant hand and then your non dominant hand.

What large number do these numbers form when written backwards: 8050607? Write down your answer with your dominant hand and then your non dominant hand.

Write down this proverb including the missing words with your dominant hand:

A ___ in the harbour is safe but not what a ____ is for.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 24

Make a rough sketch of this stick man with your dominant hand:

Make a rough sketch of the stick man with your non dominant hand.

Write down this series of numbers including the three missing numbers with your dominant hand: 10, 9, -, 7, 6, 5, -, 3, -, 1.
Write down the series of numbers backwards with your non dominant hand.

What month of the year do these letters form: ERRFUBAY?
Write down your answer backwards with your dominant hand.
Write down your answer backwards with your non dominant hand.

What large number is formed by these numbers when they are written backwards 8005006009?
Write down your answer with your dominant hand.
Write down your answer backwards with your non dominant hand.

Write down this proverb including the missing words with your dominant hand:

AS you ____, so you will _____.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 25

Make a sketch of this stick man with your dominant hand:

Make a sketch of the stick man with your non dominant hand.

Write down this series of numbers including the two missing numbers using your dominant hand: 60, 50, 40, ___ , ___, 10
Write down your answer backwards using your non dominant hand.

Write down with your dominant hand the biggest number formed when the three numbers 7, 3 and 8 are written down together.

Write down with your non dominant hand the smallest number formed when the three numbers 6, 9 and 4 are written down together?

Write down both answers backwards with your non dominant hand.

Print with your dominant hand the two months of the year formed by these groups of letters: SUTAGU and YMA?
Write down both answers backwards using your non dominant hand.

Write down this proverb including the missing word with your dominant hand:

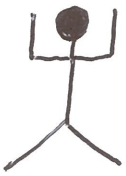
Barking _____ seldom bite.

Write down the proverb backwards using your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 26

Make a rough sketch of this stick man with your dominant hand:



Make a rough sketch of the stick man with your non dominant hand.

Write this series of numbers backwards including the three missing numbers with your dominant hand: 4, 6, __, ___, 12, 14, 16, ___.
Write down your answer backwards with your non dominant hand.

Write down the names of the days of the week that contain the letter N with your dominant hand.
Write down the names backwards with your non dominant hand.

Write down these numbers in ascending order using your dominant hand:
8, 3, 7, 2 and 9.
Write down the numbers in descending order using your non dominant hand.

Write down this proverb including the missing word with your dominant hand:

A thing begun is _____ done.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 27

On a weather map, what does this weather symbol indicate?

Make a rough sketch of the weather symbol using your dominant hand.
Make a rough sketch of the symbol using your non dominant hand.

These two capital letters are printed upside down:

Print the two letters the right way up with your dominant hand.
Print the two letters the right way up using your non dominant hand.

These numbers are written upside down:

Write the numbers the right way up with your dominant hand.
Write the numbers the right way up using your non dominant hand.

Write down this proverb including the missing word with your dominant hand:

Beauty is in the eye of the _____.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 28

Parking bays reserved for disabled drivers are labeled with this sign:

Make a rough sketch of the symbol using your dominant hand.
Make a rough sketch of the symbol using your non dominant hand.

These letters have been printed upside down:

Print the letters the right way up using your dominant hand.
Print the letters the right way up using your non dominant hand.

These numbers are written upside down:

Write the numbers the right way up using your dominant hand.
Write the numbers the right way up using your non dominant hand.

Write down this proverb including the missing word using your dominant hand:

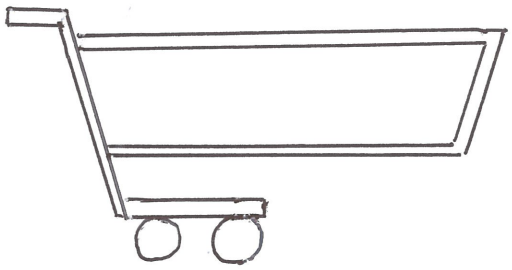
Beauty is only _____ deep.

Write down the proverb backwards using your dominant hand.
Write down the proverb using your non dominant hand.
Write down the proverb backwards using your non dominant hand.

What does the proverb mean?

Session 29

Make a rough sketch of this shopping trolley using your dominant hand.



Make a rough sketch of the trolley using your non dominant hand.

A date of birth can be written down like this: 3rd February 1939.
Write down your date of birth in the same way using your dominant hand.
Write down your date of birth using your non dominant hand.

Write down the number 357 in words using your dominant hand.
Write down the number 357 in words using your non dominant hand.

4 x 8 = 32. Write down this calculation in words using your dominant hand.
Write down the calculation in words using your non dominant hand.

Write down this proverb including the missing word with your dominant hand:

Beggars can't be _____.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 30

Make a rough sketch of this car make symbol with your dominant hand:

Make a rough sketch of the car symbol with your non dominant hand.

What make of car has this symbol?

Write down this calculation with your dominant hand:
£200 plus £50 = £250
Write down the calculation with your non dominant hand.

Write the numbers from 0 to 10 with your dominant hand.
Write the numbers from 0 to 10 backwards with your dominant hand.
Write the numbers from 0 to 10 with your non dominant hand.
Write the numbers from 0 to 10 backwards with your non dominant hand.

Christmas day is on 25th December.
Write down this date with your dominant hand.
Write down the date with your non dominant hand.

Write down the proverb including the missing word with your dominant hand:

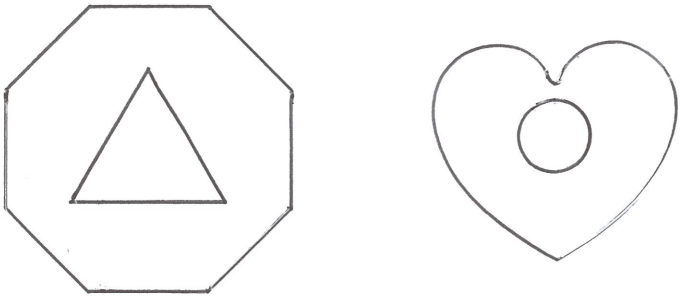
The best things in life are ____.

Write down the proverb backwards with your dominant hand.
Write down the proverb with your non dominant hand.
Write down the proverb backwards with your non dominant hand.

What does the proverb mean?

Session 3

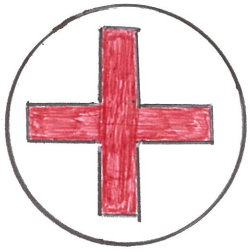
Make rough sketches of these diagrams with your dominant hand:



Shade in the middle shapes with your dominant hand.

Repeat the exercise using your non dominant hand.

Make a rough sketch of this Red Cross symbol using your dominant hand:



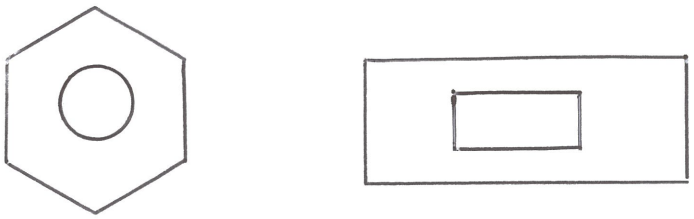
Shade in the red cross shape inside the circle with your dominant hand.

Make a rough sketch of the Red Cross symbol with your non dominant hand.

Shade in the red cross shape inside the circle with your non dominant hand.

Session 32

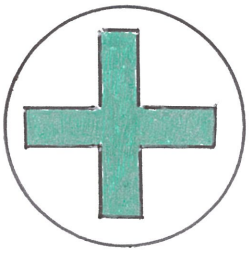
Make rough sketches of these diagrams with your dominant hand:



Shade in the middle shapes with your dominant hand.

Repeat the exercise using your non dominant hand.

Make a rough sketch of this Pharmacy symbol with your dominant hand:



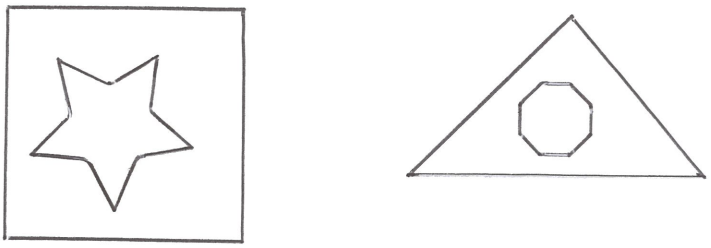
Shade in the green cross with your dominant hand.

Make a rough sketch of the Pharmacy symbol with your non dominant hand.

Shade in the green cross with your non dominant hand.

Session 33

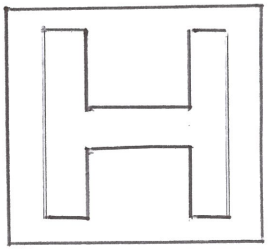
Make rough sketches of these diagrams with your dominant hand:



Shade in the middle shapes with your dominant hand.

Repeat the exercise using your non dominant hand.

Make a rough sketch of this hospital sign with your dominant hand:



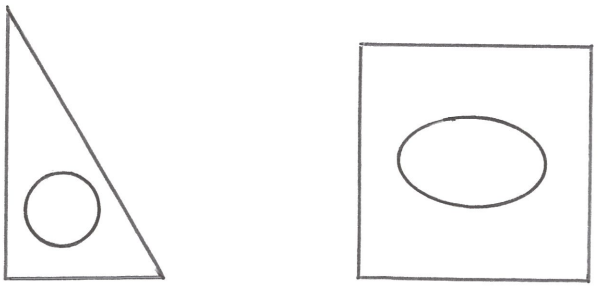
Using your dominant hand shade in the hospital sign in blue leaving the letter H white

Make a rough sketch of the hospital sign with your non dominant hand.

Using your non dominant hand shade in the hospital sign in blue leaving the letter H white.

Session 34

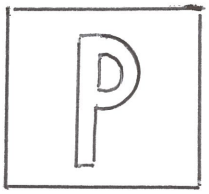
Make a rough sketch of these diagrams using your dominant hand:



Shade in the shapes in the middle with your dominant hand.

Repeat the exercise using your non dominant hand.

Make a sketch of this car parking sign with your dominant hand:



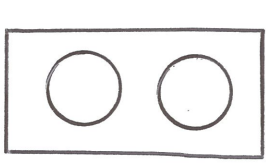
Using your dominant hand shade in the parking sign blue leaving the letter P white.

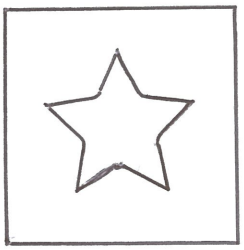
Make a rough sketch of the parking sign with your non dominant hand.

Using your non dominant hand, shade in the parking sign blue leaving the letter P white.

Session 35

Make rough sketches of these diagrams using your dominant hand:

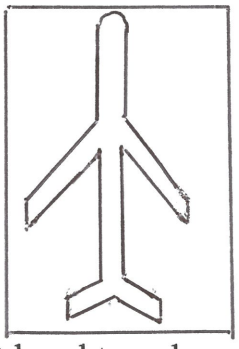




Shade in the middle shapes using your dominant hand.

Repeat the exercise using your non dominant hand.

Make a rough sketch of this airport sign using your dominant hand:



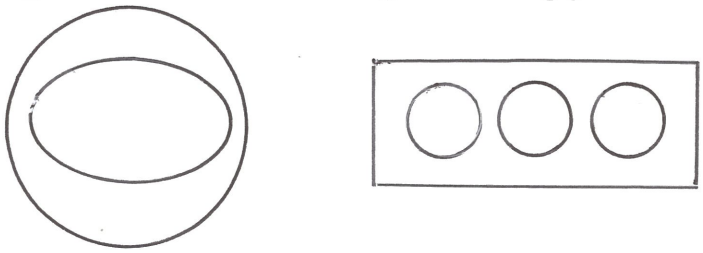
Use your dominant hand to colour in the sign green leaving the aeroplane symbol white.

Make a rough sketch of the airport sign using your non dominant hand.

Use your non dominant hand to colour in the airport sign green leaving the aeroplane symbol white

Session 36

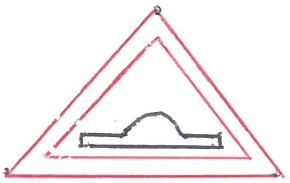
Make rough sketches of these diagrams using your dominant hand:



Use your dominant hand to shade in the middle shapes.

Repeat the exercise using your non dominant hand.

Use your dominant hand to make a rough sketch of this road sign:



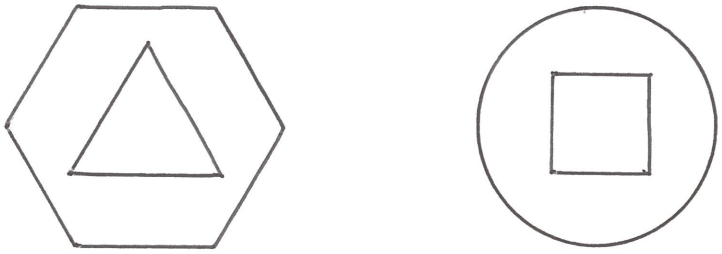
Use your dominant hand to shade in the triangle red and the road bump black.

Use your non dominant hand to make a rough sketch of the road sign.

Use your non dominant hand to colour in the triangle red and the road bump black.

Session 37

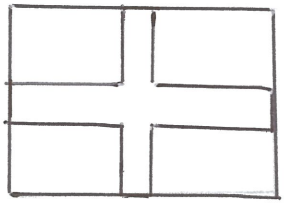
Use your dominant hand to make rough sketches of these diagrams:



Use your dominant hand to shade in the middle shapes.

Repeat the exercise using your non dominant hand.

Use your dominant hand to make a rough sketch of this flag:



Use your dominant hand to colour in the cross red leaving the rest white.

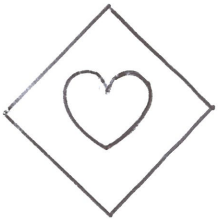
Use your non dominant hand to make a rough sketch of the flag.

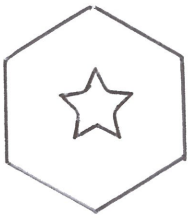
Use your non dominant hand to colour in the cross red leaving the rest white.

The flag belongs to which country?

Session 38

Use your dominant hand to make rough sketches of these diagrams:





Use your dominant hand to shade in the middle shapes.

Repeat the exercise using your non dominant hand.

Use your dominant hand to draw these two stick men:

Use your non dominant hand to draw the two stick men.

Reminders

Attempting Neurobic exercises stimulate the brain

Attempting Neurobic excises helps to prevent memory loss

Using your non dominant hand to exercise or to do daily tasks challenges your brain

Your brain likes a challenge

Your brain matters - Use it or lose it!

Author's published articles on

Mathematical topics of general interest

and

Memory enhancement

Author celebrates writing more than 50 mathematics books

Retired teacher has written for schools as well as to prevent Alzheimer's disease

As children prepare to return to school for a new academic year, an author from St Albans is celebrating publishing 50 mathematics books to help people learn.

Gareth Rowlands is a retired Mathematics teacher and lecturer who also worked as an education officer in Kenya for 14 years.

He has specially written for primary schools, secondary schools and colleges not only in the UK but all around the world, as well as campaigning to promote awareness of the role the subject plays in combatting Alzheimers disease and memory loss.

"Mathematics books can be a joy to both students and teachers alike," Gareth says. "Using colourful illustrations, clearly drawn diagrams, numerous examples with plenty of exercises along with enjoyable practical activities relating the subject to students' day to day experiences can make learning the subject a lot easier to understand and use.

"These are the vital aspects I have included. Mathematics being such an important subject in all our lives should be an enjoyable subject to learn."

Gareth also explains how maths has a part to play in the fight against Alzheimer's disease and memory loss.

He recently gave a talk on the value of mental and physical exercises in slowing down the onset of Alzheimer's disease and memory loss at Parkfield Medical Centre in Potters Bar.

He has also created the website battledementia.co.uk which he says is his "personal crusade to champion the Alzheimer's cause".

The main aims of the site are to "suggest an appropriate approach to the use of activities that could be attempted whilst caring for people suffering from dementia in an effort to improve their quality of life" and to "offer some valuable and much needed support to those who care for people suffering from dementia day-in, day-out and at night in their own homes as husbands or wives, as family members or as the dedicated, hard -working carers in residential and nursing care homes".

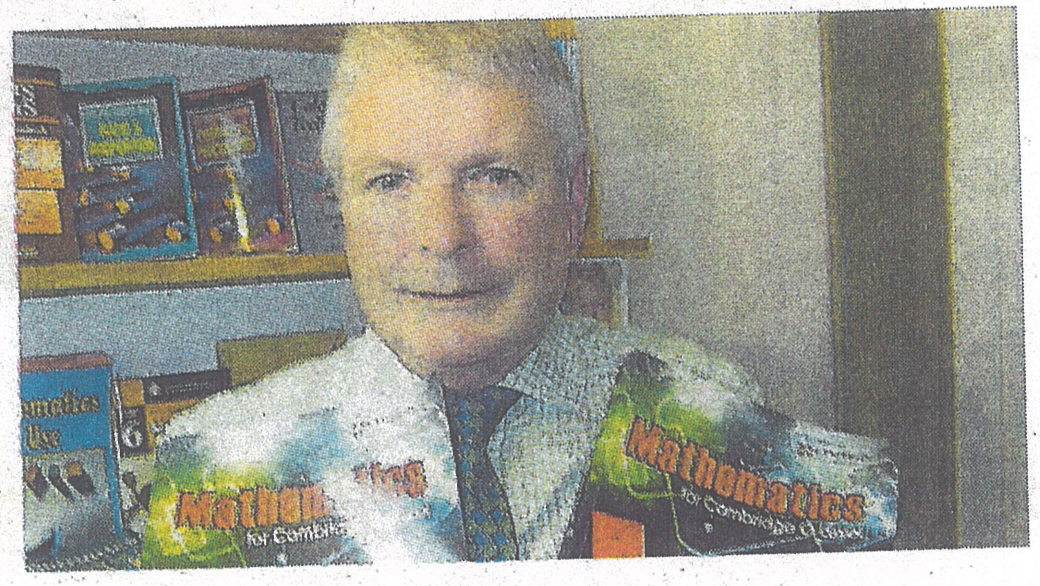
Gareth Rowlands and below a selection of his books on display

Gareth adds: "It is aimed at supporting hard working carers and to create more and more awareness of Alzheimer's disease and dementia here in the UK and internationally.

"I have already donated my activity resources to Alzheimer's organisations and residential care homes in the UK, Canada, Mauritius, Cyprus and Pakistan having been interviewed on BBC Three Counties Radio, Mauritius TV and Cyprus radio.

"Most recently, I arranged the delivery of my activity booklets to the Kenya Alzheimer's Society. I am pleased that my web site continues to gain interest internationally."

Text book success for Gareth



A Brookmans Park resident's latest GCSE maths books have been endorsed by Cambridge University.

Gareth Rowlands, a retired maths lecturer from Pine Grove, had his two 400-page text books recognised by the Cambridge International Examination Board (CIEB).

It comes after the maths whizz designed books for schools in the UK, Africa, Far East, Middle East, southeast Asia and the Caribbean.

Gareth, ***pictured***, described the recognition last month as the "biggest and most exciting achievement in my Mathematics writing experience".

He added: "To get books approved by the CIEB is a very difficult thing to get because they are extremely strict about putting their stamp on the front of any books.

"Once you get that you really have achieved something extraordinary."

The latest books contain exercises and explanations aimed to be "relevant to students' modern day lives" whilst "covering rich knowledge of history and traditions".

The maths guru, who is now designing books for schools in Rwanda, said his passion for maths stems from its influence on everyday life.

He said: "Every action we do has a mathematical content. When you go through life you are always using some type of numeracy to survive.

"We are all mathematicians in our different ways."

Overcoming fear of maths

St Albans mathematician Gareth Rowlands on overcoming the fear of maths, and how everyone has the potential to learn and succeed in the subject

I WAS once told to remember that mathematics is 'the queen and servant of all the sciences' and I also believe that mathematics is 'the romance of numbers'.

For many the subject has enabled them through an advanced study of the subject to appreciate the applications of mathematics in the wonders of the solar system, and the galaxies, problems involving the speed of light and sound, the intricacies of international investment banking just to name a few.

But not all have been able to master the different avenues of mathematics such as the complicated algebra, the applications of trigonometry, the uses of differentiation and integration in the amazing section called the calculus.

Instead many have found the subject mathematics difficult to handle, most probably because it was not properly taught or because certain vital building blocks were left out or missed, resulting in lack of continuity crucial in the learning and understanding of the subject.

A step by step approach is vital in mastering the subject and a missing link can cause considerable problems.

But I feel it is true to say that those who often say they dislike the subject or don't understand it are doing themselves a great injustice.

It could be argued that we are all mathematicians mainly because we are constantly involved with numerical aspects of number involving everyday issues requiring proper and adequate knowledge of items such as size, weight, length, time, money, volume and a host of other important daily measurement issues:

Size: will it fit? Weight: can I carry it or lift it? Length: is it long enough? Time: will I reach there in time or how long will it take? Volume: how much fuel will I need for the journey? Speed: what is the speed limit or how fast am I travelling? Distance: how far away is it?

Experiencing maths anxiety does not mean one is incapable of learning the subject. I believe children are not born to be afraid of the subject but they somehow learn to fear and avoid it as they develop.

I have seen some students facing unnecessary emotional and physical trauma before a maths test or exam without it being their fault!

I have witnessed that connecting mathematics concepts with the reality of daily life experiences can bring meaning to lessons and motivate students.

How amazing it is for example to watch dart players, snooker players, card players making instantaneous calculations without paper and pencil or calculators to work out the next move accurately.

I am also enthralled by the rapid way a market trader totals the bill correctly for a long list of vegetables and fruit.

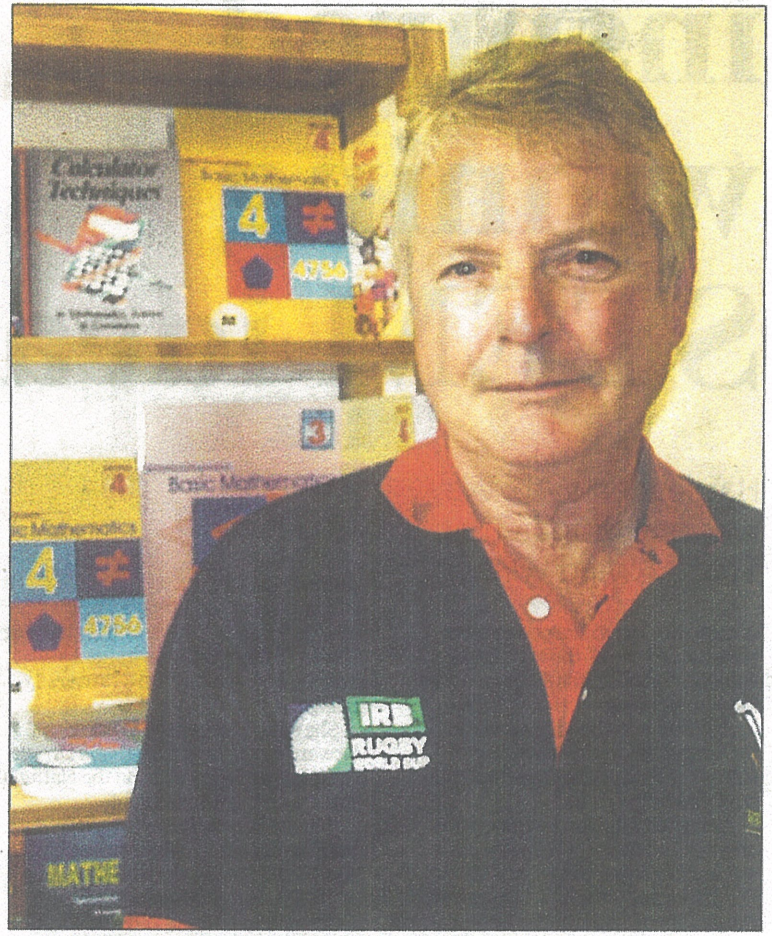
I believe everyone has the potential to learn and succeed in mathematics.

I have often helped students to overcome fear of the subject using games, puzzles, diagrams, pictures, and visual aids along with seeking help from classmates and teachers.

I encourage people having difficulties with the subject to revise and revisit areas for more practice, study worked examples in detail and then attempt graded exercises starting methodically with easy examples leading on gradually to more difficult ones. When stuck immediately ask for help!

I often emphasise that when encountering difficulties in any mathematical topic, one should take a step back to find out which building blocks have been missed.

I repeatedly remind people that the subject is for everyone, that it is creative, encourages curiosity, improves the ability to communicate, improves quality of life, helps with managing finances, helps in solving problems, prevents memory loss and can lead to excellent careers.



St Albans mathematician Gareth Rowlands

How to think outside the box

Gareth Rowlands, a St Albans mathematician and campaigner for people with memory loss, on brain teasers which challenge the brain to help combat dementia

BEFORE one of my mathematics lectures I was approached by a student and he said: "A man stands on one side of a river. His dog stands on the other side. The man calls his dog and it immediately crossed the river without getting wet.

"How did the dog cross without getting wet if there was no boat or bridge available?"

I recognised that the question was a brain teaser which required me to 'think outside the box'.

I concluded that the dog had crossed a river when it was frozen.

I thought 'outside the box' by looking for a hidden solution or pattern and not an immediately obvious answer.

Some people call this lateral thinking which is to think imaginatively using new ideas instead of traditional or expected ideas.

Having been tested in this way, I decided to pose one of my own brain teasers:

"You are led into a bathroom that has a bath full of water. You are given a tablespoon, a cup and a bucket and told to get all the water out of the bath the easiest, fastest and most efficient way you can. What do you do?

"The answer: 'Pull the plug!'"

I can't resist adding three more brain teasers. The answers can be found at the end of the article.

1. A monkey, a squirrel and a bird are racing to the top of a coconut tree. Which will get the banana first?

2. Ten ladies tried to fit under a small umbrella but none of them got wet. How did they manage this?

3. In a year there are 12 months. Some months have 31 days in them. How many months have 28 days?

I believe that in order to combat memory loss it is important to tease, stimulate and challenge the brain.

I understand that routine exercises such as crossword puzzles, Sudoku, Scrabble and dominoes are good exercises but are not as challenging as brain teasers and Neurobic exercises.

I see that attempting to solve brain teasers which are just a few short sentences requires 'thinking outside the box' by looking for a hidden solution or pattern or exercising a dab of creativity.

I maintain that attempting brain teasers also keeps the brain alive and active, promoting a knock-on effect by stimulating parts of this vital organ to improve memory retention.

After all, the brain is the most complex organ in the human body. It produces our every thought, action, memory, feeling and experiences of the world.

This jelly-like mass of tissue weighs about 1.4kg and contains a staggering one hundred billion nerve cells which is about the same as the number of stars in the Milky Way.

Your brain is the part of the body that makes you who you are.

The beauty of brain teasers is that they can be attempted as intergenerational activities in family units providing such fun and a cognitive challenge which strengthens the brain and improves memory retention.

Answers to previous brain teasers:

1. None of them. You can't get a banana from a coconut tree.

2. It was not raining.

3. All of them.

Brain teasers can be found online or in most bookshops.

St Albans mathematician Gareth Rowlands

At the touch of a button

St Albans mathematician Gareth Rowlands explores the use of buttons and keys in our everyday life, and how this can be challenging for people with dementia

I BECAME more aware recently that push buttons pop up on everything ranging from electric toothbrushes and door bells to aeroplane cockpits.

If we don't press the keys or buttons we come across in our daily lives we remain static or just get plain stuck!

And then when you do press or tap them we hope for best to get the expected result to enable us to progress and get what we wanted.

You can't escape it! We are surrounded by keys and buttons! You've just got to keep on pressing those buttons to get on to the next stage.

I came to the conclusion recently that if you want something you can get it more or less at the press of a button or key.

I have also found that pressing the wrong keys or buttons can be quite problematic which can require a number of steps to correct the situation.

When I recently visited my local bank to withdraw money from the cash machine I incorrectly keyed in my pin number not just once but three times, which meant that my pin became locked.

To unlock my pin I had to resort to using the pin services provided but at some banks the plastic card can be retained by the cash machine.

Having rectified my pin problems at the bank, I proceeded to cross the road but before doing so had to press the traffic light button to ensure a safe crossing.

I then proceeded to the local coffee bar to purchase a coffee and various items but not before having to key in the order on the menu board.

I received my order and proceeded to use my laptop to key in an email to a friend.

I became very much aware that from the time I had entered the bank, withdrawn money from the cash machine, crossed the road, ordered items at the coffee bar and then sat down to key in an email, that I had pressed so many keys and buttons and would have made no progress at all without doing so.

I have often taken for granted the number of buttons I need to press in the correct order when I use my household appliances.

To be on the safe side I have written in the correct order the buttons or keys to press for each appliance as to remember the key sequences for appliances such as the microwave oven, the main oven, the washing machine, the dishwasher can be quite a task.

This is particularly true for people living with memory problems.

I often look at my electronic calculator and marvel at the number of keys and their functions and how it is possible to obtain so many solutions by just pressing buttons in the right sequence.

But during my work in mathematics I often reminded students to take the utmost care when pressing buttons and to first of all work out a rough answer for their calculation in case they press the wrong buttons.

I believe that care should also be taken when using the computer keyboard and I am reminded of the many times I have pressed the 'delete' button instead of the 'save' button with drastic consequences.

Perhaps we should bear in mind that when we press buttons and keys we always expect the required or favourable outcome but things can go wrong if we press the wrong buttons or press them in the incorrect order.

Gareth Rowlands

Is texting language all bad?

St Albans mathematician Gareth Rowlands delves into the pros and cons of modern texting language and if it's a cause for concern

VISITING a busy restaurant recently I thought I had accidentally entered a prayer meeting. All heads were bowed, but I realised that most people were in a world of their own busy looking at or tapping their mobile phones.

Wherever I go now I notice that for many people the mobile phone seems to have become a fixed attachment to the arm!

But I am sure we have all seen that with the rapid increase in the uses of modern technology involving laptops, touch screen tablets and sophisticated mobile phones there is a growing popularity in the use of a very complex texting language comprising letters, numbers, symbols and even amusing emojis which use less space and are a quick for sending messages.

But I am told that some linguists, scholars, educationalists, parents and teachers in particular are voicing their deep concerns about the detrimental effect the use of what many call a gobbledegook lingo is having on the proper and good use of the English language.

I have seen that texting especially among the younger generation is on the increase. They find it so much fun and they can engage.

Some teachers tell me that they fear the demise of good spoken and written English whilst others remain shocked by students' use of texting language in submitting essays with many linguists and educationalists up in arms and angry that the English language 'is being destroyed'.

I was surprised that some went as far as saying so harshly that the texting language is becoming 'a penmanship for the lazy' who send and receive messages that look and sound more complex than a list of Egyptian hieroglyphics!

Others say that the texting language has no proper punctuation or grammar and simply use a mixture of letters, numbers, symbols and abbreviated words conveniently avoiding opportunities for clear expression and eloquence.

I do believe there could be some cause of concern that some students may not be able to complete a curriculum vitae, emails, letters and application forms correctly raising doubts in the employer's mind that the applicant if engaged would be unable to deal appropriately with customers or clients.

But 'looking on the other side of the coin' there are a number of observers who have emphasised to me that they differ in the thoughts expressed by many educationalists and others in what they say about the new and growing texting language.

They tell me about many students who are regularly texting and are able at the same time to master the language of mathematics which we know is littered with letters, numbers, symbols, complex formulae and intricate equations requiring the use of its own abbreviated form of language, and so they therefore see no real cause for concern.

Moreover, I have come across many students especially those living in multicultural societies and communities who are able to read and write more than one language using correct spelling, grammar and punctuation, and on inspection, I have found that as in our new electronic texting language, most languages use thousands of abbreviations and acronyms.

I believe that as modern technology becomes more and more advanced we must make room for what some humorously describe as the rise of 'an alien-like, mind-boggling gobbledegook language' especially if we want to move on with new technology and make use of it to improve the quality of our lives.

Of course we can make room for the new electronic texting language by using it and appreciating it more, and at the same time strive to safeguard the values of all our precious and traditional languages so that we can aim to express ourselves correctly and clearly at all times.

Gareth Rowlands

Depending on our phones

St Albans mathematician Gareth Rowlands on our increasing dependence on technology, and whether we are becoming too reliant on our phones

I BELIEVE that many of us may become 'nomophobic' which is the fear of being without our mobile phones or not having a Wi-Fi connection.

I am aware that electronic devices play an important and prominent part in such areas as employment, social life and entertainment, and can provide us with so much information by merely pressing a button or swiping a screen.

But I was aware recently how many of us may have become overly attached to some modern technology devices – especially our mobile phones, which some treat as their best friends and have to have them very close by at all times!

I am told by some researchers that this type of compulsive behaviour is some kind of addiction which forces one to check the phone every few minutes for messages or updates.

But we are all aware that regardless of what the unwise use of modern technology is called, the constant or obsessive use of the mobile phone can create problems or barriers between family members due to lack of normal everyday conversations.

In some cases the mobile phone seems to have become a fixed attachment to the arm being constantly used and referred to.

I have read that in some countries digital detox centres have been established to help with the misuse of technology.

In some cases people who checked in to the detox centres have lost their jobs and others have neglected their families and lost all their friends.

I learn that many children are becoming so attached to their mobile phones that they have to be treated for problems resulting from being hunched over their gizmos for long periods of time, with many complaining of pains in their backs and necks because they have put their necks and shock-absorbing discs that cushion their vertebrae under too much strain.

Some have also created thumb problems due to constant texting, a condition known as 'blackberry thumb' (tendonitis at the base of the thumb).

I have read the very useful and interesting guidelines issued recently for schools by the Department of Education on prohibiting the use of mobile phones throughout the school day.

I believe that mobile phones have already been banned in schools, not to be used, seen or heard!

I am sure that learning can not happen without attention. A lot of the issues surrounding mobile phones in schools has been about a battle for attention, a battle for focus and concentration without the constant and unwanted distractions of mobile phones.

I believe a teacher's work is hard enough without having to compete with a classroom full of mobile phones!

It is not just having a phone and using it, it's the mere presence of the phone. If a student has a phone in the same room and it could be in a bag or pocket, the brain is 'leaking attention' still thinking about it and wondering if there is a message or some other notification on it.

I also feel there is a responsibility for society to respond to the scourge of mobile phones along with social media fuelling self harm and destructive behaviour.

Banning students from using mobile phones helps to keep them safe at school and removes any unwanted and unpleasant distractions to enable them to be fully present and engaged in the classroom, paying full attention to the teacher.

On the other hand I am aware that some students need their mobile phones at hand for certain medical reasons or having special educational needs or disabilities, and at the right time and place mobile phones are vital for security reasons.

However with our ever-growing dependency, how easy is it for us to decide if we are becoming 'nomophobic'?

St Albans mathematician Gareth Rowlands

ADVERTISER
(//herts24.co.uk/inbriefemail)

St Albans mathematician has created free mind puzzles to help people prevent dementia

PUBLISHED: 15:00 13 May 2018 | UPDATED: 16:55 13 May 2018

Franki Berry (mailto:Frances.Berry@archant.co.uk)

Gareth Rowlands with his website

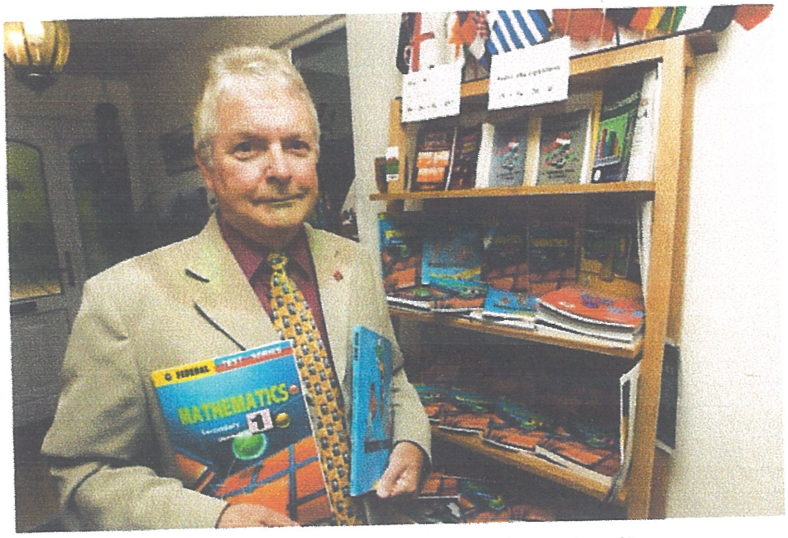
A local mathematician has created a series of dementia prevention puzzles, available for free.

Just ten minutes a day spent completing the exercises will make the brain brighter, more organised, and happier. Gareth said.

He has presented the mental training at workshops and talks around Hertfordshire.

Gareth said: "I have what is called a personal crusade that I have taken upon myself because I have seen people suffering from Alzheimer's and worked with them, helped them, looked after them in a care home.

"It's a terrible thing to see people forgetting not just small things, but as it gets worse they forget everything and everybody and they can't remember anything."



Gareth Rowlands with a selection of his Maths text books which are used around the world

Neurobic exercises

A neurobic exercises project sidesteps and overcomes COVID-19

Words ALAN DAVIES

The dictionary describes neurobics as activities or mental (cognitive) tasks that stimulate the brain and help prevent memory loss.

Using his website *www.battledementia.co.uk*, a St Albans mathematician is winning the battle against COVID-19 by providing care homes in Hertfordshire and care centres worldwide with his brain stimulating neurobic exercises.

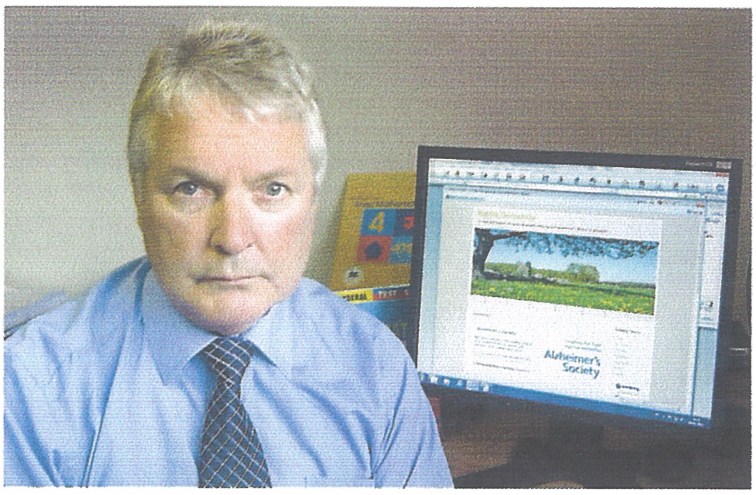
Before the outbreak of the pandemic, Gareth Rowlands, a campaigner for people living with memory loss such as Alzheimer's disease and dementia, was able to organise workshops at care homes, dementia cafes and doctors' surgeries throughout the county.

He decided to combat the visiting restrictions posed by COVID-19 by using his website.

According to recent and ongoing research, neurobic exercises stimulate the brain, improve one's memory and enhance one's quality of life.

The brain loves a challenge, especially a change in routine.

On the opening page of his website, Gareth's resource booklet *'Your Brain Matters'*, which contains hundreds of memory boosting exercises, can be downloaded free of charge.



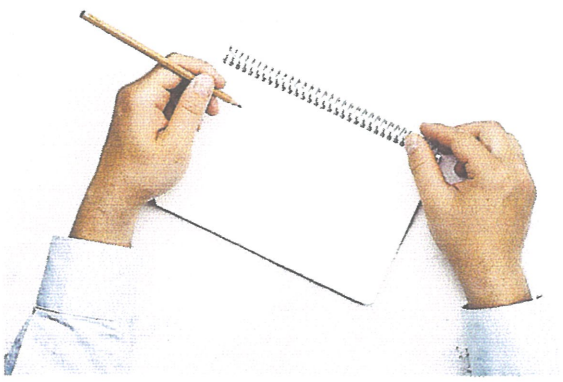
Gareth Rowlands, a mathematician and a personal campaigner for people living with memory loss such as Alzheimer's disease and dementia

The brain exercises, which act like a workout for the brain, involve using one's non-dominant hand to write symbols, letters, words, and sentences including drawing simple diagrams.

Attempting the exercises daily for 10 to 15 minutes can reap the benefits of improved memory, alertness, greater awareness and happier moods, which in turn enhance the quality of life.

Other examples of neurobic exercises include using one's non-dominant hand while eating, cleaning one's teeth, doing up buttons while dressing, combing or brushing one's hair, opening and shutting doors and containers, in addition to using two of one's senses at the same time, such as listening to music whilst drawing a picture.

SIMPLE BRAIN EXERCISES TO TRY



PICTURE: GETTY IMAGES / ISTOCKPHOTO / JULIA SUDNITSKAYA

- Firstly, if you are right handed, your usual hand is your right hand.
  If you are right handed, your unusual hand is your left hand.
  If you are left handed, your usual hand is your left hand.
  If you are left handed, your unusual hand is your right hand.
  All you need is a pencil and paper for this exercise. Have fun!
- Write down your first name with your usual hand.
  Write down your name with your unusual hand.
  Write down your name backwards with your usual hand.
  Write down your name backwards with your unusual hand.
- Make a rough sketch of the letter A with your usual hand.
  Make a rough sketch of the letter with your unusual hand.
- Write down the number 564 with your usual hand.
  Write down the number with your unusual hand.
  Write down the number backwards with your usual hand.
  Write down the number backwards with your unusual hand.

Shapes to improve memory

St Albans mathematician Gareth Rowlands explains his pioneering 'neurobic' exercises, which can be used to help people suffering from memory loss

AS a campaigner for people living with memory loss, I was delighted recently to read reports about the discovery of the Alzheimer's drug Donanemab and to hear that the breakthrough medication could be made available on the NHS as early as 2025.

I realise that this is a huge turning point in the fight against memory loss and how it is possible to slow it down. But apparently the drug is only for people with early stages of memory loss and the side effects and costs of producing and supplying the drug are under investigation.

I am also very much aware that there are still a number of much needed and on going research programmes in the fight against memory loss.

One of these is the use of Neurobic exercises to combat memory loss which I have pioneered myself.

My Neurobic exercises resources can be found on my website *www.battledementia.co.uk* and my most recent resource is called "Creating non dominant hand designs using overlapping mathematical shapes" Some of my designs are illustrated.

I am a St Albans mathematician, and I decided to apply my knowledge of mathematics to compile this new resource on Neurobic exercises which describes how to create non dominant hand designs using spaces resulting from overlapping mathematical shapes.

The methods involve using basic drawing materials such as geometrical drawing stencils, rulers, pens, pencils and felt tipped pens to create very attractive designs by colouring in the spaces created where the geometrical shapes overlap each other. But it is important to use the non dominant hand.

My research has found that using the non dominant hand to perform basic functions challenge and stimulate the brain and in turn improve memory retention.

During my visits to care homes, dementia cafes and other venues to set up Neurobic exercises workshops, I emphasise that by making efforts to give the brain regular workouts keeps the brain alert and prevents the onset of memory loss. After all 'prevention is better than cure'!

Some of the geometrical shapes used in my resource are the ones commonly seen in the world around us, for example, when we look at the architecture of some of our buildings and homes or even the shapes seen in the type of packaging used for various items we buy in our shops and supermarkets.

My new resource illustrates how I create many colourful designs which have been carefully created using the non dominant hand and there are also many exercises which visitors to the resource can attempt.

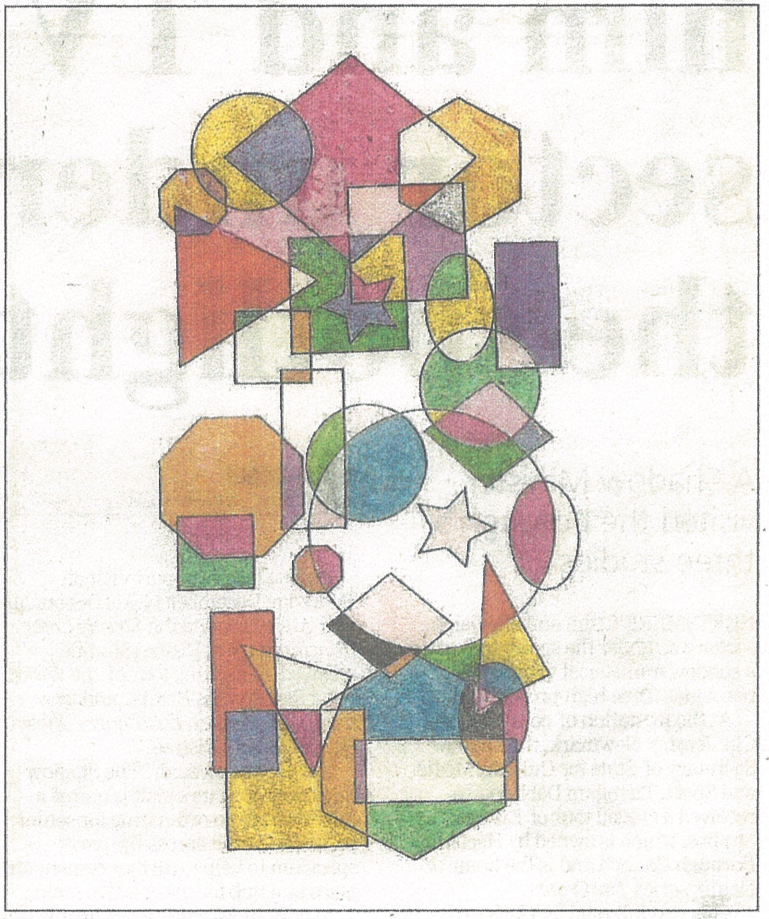
I have found that when the designs are completed they can form attractive displays as shown in the pictures.

I also found that when two or more designs are put together they can form attractive art work which can be framed and displayed.

I think it is vital to keep the brain active as an active brain is a healthy brain and our brain enjoys tackling challenging exercises like the ones I use and described here and in all my resources.

According to ongoing research, Neurobic exercises help to delay memory loss and keep the mind working 'better for longer'.

I am pleased to share my new resource and the others which can be downloaded free from my website.



Gareth's Neurobic exercises.

Picture: **Gareth Rowlands**

Help fighting memory loss

Hertfordshire mathematician Gareth Rowlands on how neurobic exercises he has created can be used by different generations to help tackle memory loss and dementia

HAVING read a number of recent research papers on memory loss I am convinced that getting involved in stimulating activities can protect the brain.

I am aware that a decline in brain function may often be a part of ageing but there are steps we can take to mitigate the impact.

I learn from numerous published sources that a mentally and physically active lifestyle can build a cognitive reserve that is a bank of brain enrichment which makes one more adaptive and acts as a buffer from cognitive decline.

This is also noticeable even in patients demonstrating the early signs of Alzheimer's disease helping them to experience the condition less rapidly.

I am convinced that participating in intergenerational activities is a very positive way to combat memory loss and at the same time can have an impact on quality of life and well being across the age group within any family structure: Great-grandparents, grandparents, parents, children and grandchildren.

I believe that families would be delighted to encourage the young and old to have so much fun attempting everyday household tasks together, doing simple exercises together and taking part together in any activity they enjoy to create a great intergenerational atmosphere and activity in the home.

Great grandparents, grandparents, parents, children and grandchildren as well as uncles, aunts, brothers, sisters and cousins can all get involved in intergenerational activities such as organising cooking sessions together to produce cakes and biscuits, gardening to grow fruits, vegetables and flowers, organizing family quizzes, memory games, painting and drawing, reading newspapers and books together, singing songs and dancing, walking together, playing games and even reminiscing and telling stories to recollect past family history.

The sharing of everyday tasks in different situations can be exploited as intergenerational activities.

When I visit care homes and dementia cafes and other venues to organise workshops I use my Neurobic exercises to help participants to stimulate their brains using their non dominant hands to perform simple exercises like writing their names backwards and drawing simple mathematical shapes.

Organising intergenerational activities is a beautiful way to create meaningful connections within families and enhances the quality of life for everyone involved across all the age groups demonstrating the joy produced when young and old have fun playing and talking together.

I have found that a quiz night organised for a family can be doubly beneficial as it combines learning with companionship, and my research indicates that participants engaged in regular activities especially Neurobic exercises using the non dominant hand show significant improvements in memory retention.

In addition, I found that quizzes which engage the hippocampus in our brain, an area which deals with memory, produces results in the growth and revival of neurons vital for improving our abilities to remember things better.

I also saw that when people do things together in social groups it benefits cognitive health enabling people to have the ability to remember things better. I also encourage families to include friends and relatives in their intergenerational projects.

I remind families that doing the intergenerational activities on a regular basis creates a valuable reserve bank which enriches the brain to build that important buffer to battle memory loss and increase memory retention as one grows older.

In my ongoing campaign to help people combat memory loss I fully endorse the uses of intergenerational activities as a new way to fight dementia.

Gareth Rowlands

Exercises for the memory

Gareth Rowlands, a St Albans mathematician, has recently compiled exercise sessions which stimulate the brain and prevent memory loss, especially if attempted daily for about 15 minutes. Here his pioneering new technique is explained...

THE Word Health Organisation recommends eating a minimum of 400 grams of fruit and vegetables a day to lower the risk of serious health problems such as heart disease, stroke and some types of cancer.

Regular physical exercises can keep our bodies fit and healthy as well as a number of other personal routines for example brushing our teeth at least once a day to prevent tooth decay.

But are we looking after our brain? The human brain has been described as the most complex object in the universe. It is responsible for everything we do, think, feel and say.

The brain makes you who you are and enables you to go about your daily activities. The brain is the crown jewel of the human body.

Gareth Rowlands, a St Albans mathematician, has recently compiled ready made exercises sessions which stimulate the brain and prevent memory loss especially if attempted daily for about fifteen minutes. The exercises are called Neurobic exercises which challenge the brain and provide an ideal workout for the brain.

Ongoing research into the functions of different part of the brain confirms that attempting Neurobic exercises regularly prevents the onset of Alzheimer's disease and dementia.

Although routine puzzles such as crosswords, scrabble and Sudoku are themselves stimulating they do not provide the sufficient challenges and new surprises that the brain craves for.

Not only are the exercises easy and convenient to access in his new resource they provide considerable fun and entertainment and it is easy to write similar exercises to suit peoples' different needs and circumstances.

By visiting the opening HOME page of his website www.battledementia.co.uk you can download free the daily Neurobic exercises sessions described in his resource booklet 'Neurobics at your fingertips'.

On the same page there are two other memory resource booklets 'Our Brain Matters' and 'At Home With Neurobics'.

The Neurobic exercises emphasise the use of your non dominant hand and involve the use of words, sentences, numbers, proverbs and diagrams in an amusing way providing fun and can be attempted individually, in pairs, in groups or as a family.

There is a section in the booklet called Non Dom Designs which gives an opportunity using your non dominant hand to copy, draw and colour shapes to make artistic designs which the author has called Non Dom designs.

Gareth organizes Neurobic exercises workshops throughout Hertfordshire by visiting care homes and dementia cafes using his own Neurobic exercises resources.

He maintains his efforts will help people living with memory loss to battle Alzheimer's disease and dementia. His new resource booklet 'Neurobics at your fingertips' will help carers

He has pioneered the use of Neurobic exercises to combat the onset of Alzheimer's disease and dementia and will leave no stone unturned to fight the debilitating disease affecting so many.

There are currently 55 million people living with dementia worldwide and there are nearly 10 million new cases every year. Dementia is currently the seventh leading cause of death among all diseases and one of the major causes of disability and dependency among people destroying lives globally.

Dementia is an umbrella term for a range of progressive conditions that affect the brain.

Each type of dementia stops a person's brain cells (neurones) working properly in specific areas, affecting their ability to remember, think and speak.

Doctors typically use the word "dementia" to describe common symptoms – such as memory loss, confusion, and problems with speech and understanding – that get worse over time.

Gareth Rowlands

Technology for memory loss

St Albans mathematician Gareth Rowlands on how technology like an Alexa can be used to help tackle memory loss, along with using diaries and calendars

I was shocked recently when I saw the latest statistics issued by the Alzheimer's Society indicating that there is a growing and alarming number of people now living with memory loss.

The number of people living with dementia is predicted to rise to over 1.1 million by 2030 and one in three people will develop dementia in their lifetime. I believe we must constantly look at new ways to fight and tackle the scourge of memory loss.

There are various ways of fighting memory loss and when I visit care homes and memory cafes I am repeatedly told that attempting my neurobic exercises and keeping their brains active is not only so much fun but also helps to increase memory retention and fight memory loss. Keeping the brain active is an important part in fighting forgetfulness.

Looking around care homes and everywhere I go I notice different aids being used by people to help to keep different parts of the body functioning as they age.

For example, people use walking sticks and Zimmer frames and crutches to help with mobility, spectacles and magnifying glasses to read and see things better and hearing aids to hear better.

Similarly, diaries, calendars and note books can be very useful items for storing information and supporting the brain.

I was also reminded how important keeping records can be especially for keeping medical appointments and taking essential medication and there are also personal dates such as birthdays, anniversaries and other celebrations.

However, a question that came to my mind recently was: can modern technology devices be used and adapted to assist people needing help to remember day to day tasks?

On a recent visit to a friend's house I came across a voice activated assistant called Alexa that uses artificial intelligence to respond to various commands.

Once set up, I saw that the device could be operated without having to get up and push buttons or learn complicated programming sequences to use it.

I immediately saw that there are benefits for people with memory loss and that the device can be useful in setting alarms and reminders throughout the day, enabling one to stay on top of important schedules and appointments including recurring reminders for doing certain chores and personal care tasks such as taking medication.

I also saw that the device can create lists such as shopping lists on a smart phone. I was amazed how the device controlled certain smart home appliances such as doorbell cameras, security cameras, TV programme selections, voice control and thermostat adjustments.

I have often seen how some of our elderly living with memory loss struggle and how it impacts on their day-to day activities including tasks that were once familiar.

I can see how the device Alexa can be really useful especially during the early stages of memory loss where people can still live alone with some support and supervision.

By programming the device with routines and teaching users how to use the device properly, the elderly can retain some of their independence which may help them also to adjust somewhat to living with memory loss.

I can also see the potential for programming reminders for meals, medication, appointments and many other tasks to manage a loved one's care schedule from a distance.

Keeping a diary, filling in a calendar or asking Alexa for help could certainly improve the quality of life of people already stressed by the onset of memory loss.

Gareth Rowlands