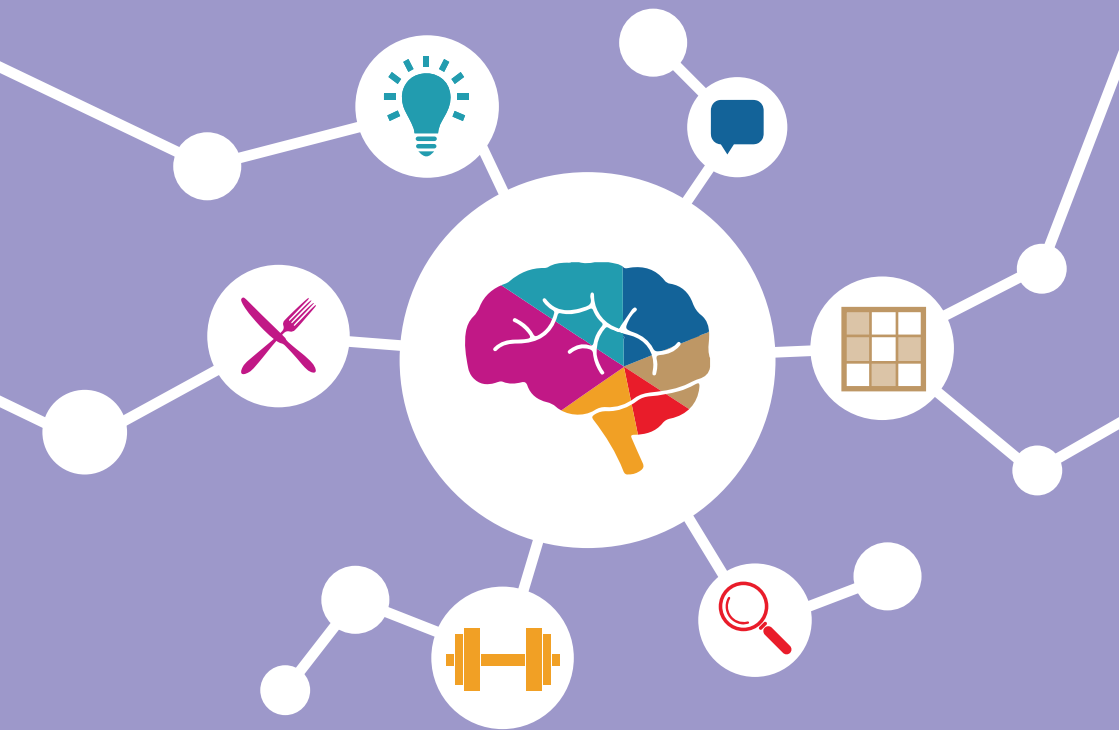


The Telegraph

# THE BIG BRAIN WORKOUT

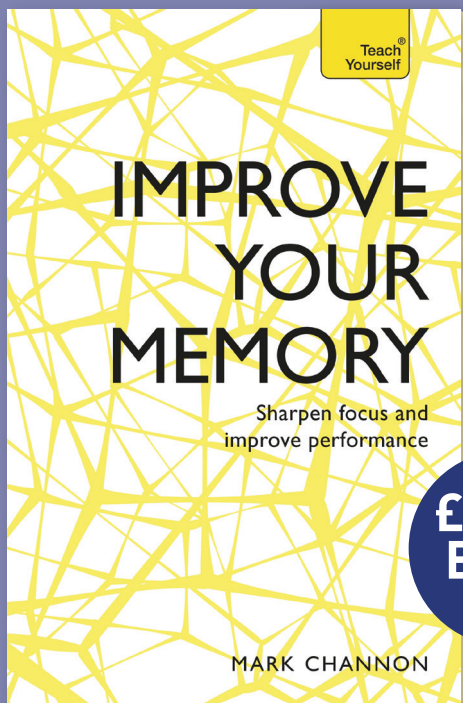


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strengthen your mind

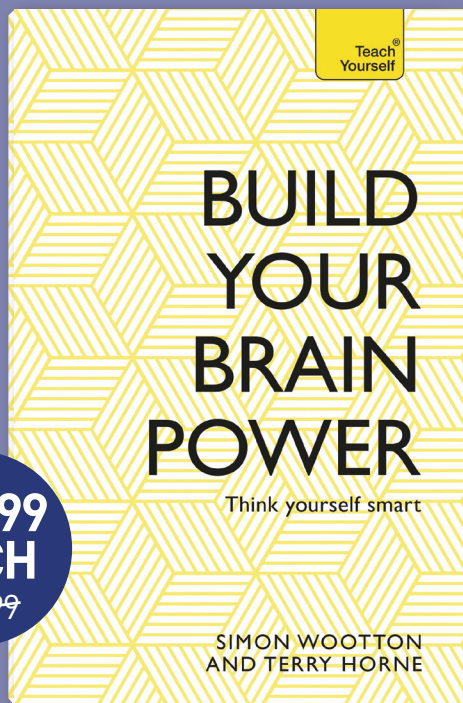
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## Introduction

Welcome to the second booklet of The Telegraph's *Big Brain Workout*, which contains more than 50 IQ, creative, verbal and memory puzzles to tax your brain. We've also included a section on Sudoku, as well as a Toughie Telegraph crossword.

To master creative-thinking puzzles, try a couple of the easier exercises and then concentrate on one of the harder problems. There are also 12 challenging verbal puzzles that should have you scratching your head.

The booklet also outlines techniques to help you improve your memory by association, repetition and visualisation, and explains how you can increase the speed of memory formation by tackling brain-training puzzles involving numbers. The hippocampus is one of the only areas in the brain where new neurons are formed, and the rate at which they are produced accelerates after exercise, so physical and mental activity are vital for maintaining our memories.

Don't worry if you can't solve every problem – there are handy hints throughout the booklet and all the answers are listed at the back.

There are diet and lifestyle tips to help you keep your brain working as well as possible. From what to eat and drink to advice about exercise and avoiding alcohol or smoking, there's information for all brain-trainers.

Enjoy!

P.S. Visit [telegraph.co.uk/brainworkout](http://telegraph.co.uk/brainworkout) for additional lifestyle tips, offers and more.

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## THE BENEFITS OF BRAIN TRAINING

The hippocampus may produce extra neurons during your lifetime but scientists believe it's vital to maintain the connections between your existing brain cells. Cab drivers taking the famous 'Knowledge' test show measurable improvements in memory, and musicians show increased brain activity after practising. Discussing creative, numerical and verbal puzzles strengthens the pathways in the brain and also improves memory. Indeed, many scientists believe that the brain is like a muscle. The more exercise it gets, the more powerful it becomes.

# DIET, EXERCISE & LIFESTYLE

## Introduction

Our brains are affected by the food and drink we consume, plus any exercise we do and whether we smoke or drink alcohol. Neurotransmitters like dopamine and norepinephrine are essential for keeping us alert, and for high-speed calculations, evaluating situations and thinking critically. A high-protein diet increases the supply of these neurotransmitters and helps keep us mentally active.

Solid, saturated trans fats found in hydrogenated oils, cakes, pastries and biscuits are difficult for the body to metabolise, and consuming too much can eventually lead to cardiovascular disease. These fats also inhibit the body's ability to absorb useful omega-3 and omega-6 fatty acids. These fatty acids help your brain produce acetylcholine, which keeps your cells pliable and increases memory, thinking speed, understanding and accuracy.

The speed and accuracy of our thoughts are also believed to be linked to a high-protein diet. Save simple carbohydrates for later in the day when their metabolism will make you tired and ready for bed. If your diet contains too much refined carbohydrate, however, you risk impairing your body's ability to produce insulin. Type 2 diabetes affects your cardiovascular system and eyesight, and can also lead to neuropathic complications. Smoking can also cause circulatory problems, while alcohol adversely affects short-term memory and coordination.

Boron, iron and zinc can help stimulate mental activity. Broccoli, nuts and beans are rich in boron; zinc can be found in dairy products, fish and beans; and the vitamin C in citrus fruits helps the body absorb the iron in spinach, dried fruit and pasta.

Oily fish or eggs for breakfast are better than sugary cereals.



Drink plenty of water (eight glasses) throughout the day.





Try raw vegetables and fresh fruit for lunch.



Brain function is impaired by alcohol, caffeine, drugs and smoking.



Save bread, pizza and pasta for the evening meal as digesting these carbohydrates can make you drowsy.



Improve your cognitive function with folic acid and selenium, which are found in lettuce, nuts and meat.



Try to avoid taxing conversations or detailed planning before going to bed. Sleep deprivation reduces your ability to think clearly.



Exercise stimulates the mind as well as the body. It also promotes a feeling of wellbeing and produces chemicals that help you relax.



# IQ WORKOUT

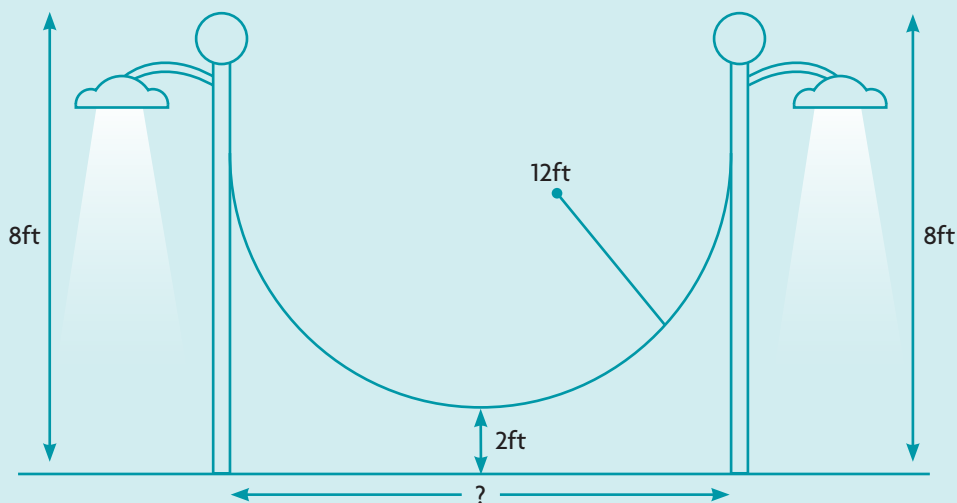


## Introduction

We can develop many facets of our intelligence during our lifetimes. Employers may use verbal, numerical and spatial IQ tests to gauge people's aptitude but overall intelligence includes factors like memory, creativity, the ability to predict behaviour and general knowledge. You may not think you can increase your cognitive capacity as you age, but we can all improve our ability to recall events and lists, as well as the other skills. Quality of life is more closely linked with emotional intelligence than high IQ, but you can still test your mental agility by tackling the following puzzles.

### Q1. Swinging between beach showers

A 12-foot rope is secured to the tops of two eight-foot beach showers. The rope hangs down between them so that the rope is two feet from the ground at its lowest point. How far apart are the two posts?



### Q2. Segments and life support

What life support could be chemically represented by the following segment of the alphabet?

**HIJKLMNO**

### Q3. Job selection: does colour matter?

Three candidates for a high-IQ job are asked to close their eyes while a mark, either black or white, is placed on their forehead. They are asked to open their eyes and raise a hand if they can see a black mark on the forehead of another candidate. All three raise a hand. The first candidate to identify the colour on his own forehead will get the job. After a while, one of the candidates is given the job. How did he work out what colour his mark was?

### Improve your memory

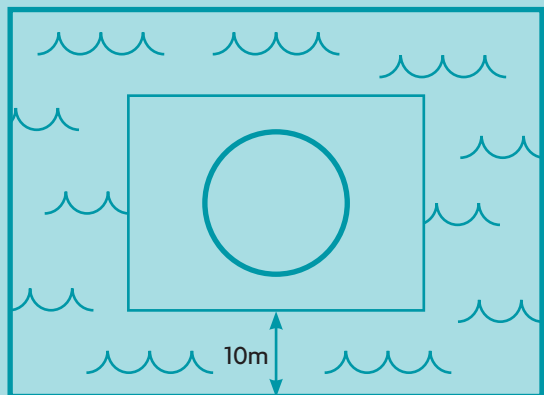
Carnegie University in the USA studied male volunteers who practised brain-training techniques for three hours a week over the course of three terms. By the end of the study, some volunteers could remember 79 digits and 80 per cent of the information delivered in a one-hour lecture.

### Q4. Seven-year itch?

Not very long after it was bought second-hand, a sports car was fitted with a new, more powerful engine. Now the car is twice as old as its engine had been when the car was as old as the engine is now. How old was the car when the more powerful engine was fitted? The combined age of the engine and car is 49 years.

### Q5. Moat width

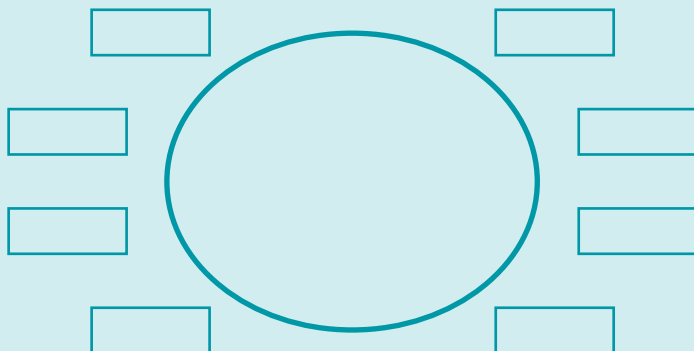
At its narrowest point, the castle moat is 10m wide. You have only two  $1\text{m} \times 9.5\text{m}$  planks and no means to join them, although they may touch. How can you use the two planks to cross the moat? (The planks must not touch the water and you cannot counterbalance one end by standing on it.)





### Q6. The knights of the round table

In how many different ways can eight knights be arranged around the table?



### Q7. A big chest

A big chest holds two chests that each hold three chests that each hold four chests. Only one chest contains gold. How many chests must be opened to be sure of finding the gold?

#### Focus points

IQ tests measure important skills that contribute to your overall intelligence. Practising these types of puzzle helps develop spare cognitive capacity and may increase your IQ by up to 15 points, although high IQ is no guarantee of intelligent behaviour.

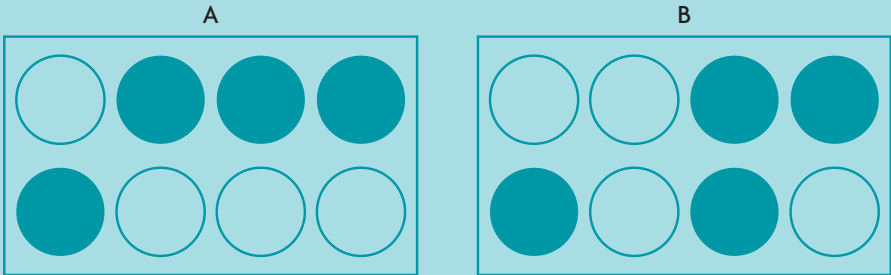
### Q8. Bottles and tops

A bottle top costs one-tenth as much as the bottle. Together they cost £2.20. What does the bottle cost?



**Q9. A load of balls**

A blindfolded man takes a ball out of Box A and then a ball out of Box B. What are his chances of picking at least one black ball?

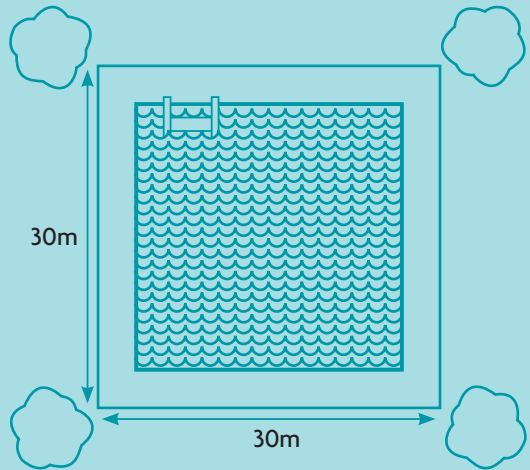


**Speed and accuracy**

Increasing your speed and accuracy when solving these puzzles helps thicken the insulation surrounding the neurons in your brain. Intelligence is linked to the number and quality of these neural pathways.

**Q10. Saving trees**

The swimming pool is square and has an area of 900 square metres. How can you rebuild the pool, keeping it square with centre in the same place, but doubling its area to 1,800 square metres. You may not fell the trees or surround them with water.



# CREATIVE THINKING



## Introduction

With numerical workouts, it's best to warm up by doing several quickfire exercises. To master creative-thinking puzzles, on the other hand, you should warm up with one or two exercises and then concentrate on a single problem. You might become impatient and want to look at the solution, but try to resist and let your mind immerse itself in the problem. If you still can't find an answer, discuss the issue with friends and evaluate their suggestions. You may find the solution suddenly presents itself. The puzzles on the following pages should get your creative juices flowing. Some are easy and some will have even the smartest readers scratching their heads.

### Q1. The shy boy is my boy

A shy boy has never hugged a girl and wouldn't know where to start. While browsing his favourite second-hand bookshop he spots just the thing: HOW TO HUG. When he gets home, he realises he has bought more than he bargained for. Why?

### Q2. Pale at Christmas

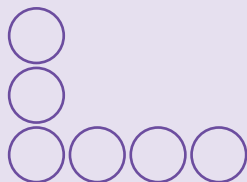
Some winter mornings she wakes up feeling a little grumpy. What is her name?

### Q3. 10cm short: is size an issue?

After a medical examination, I concluded that I am 10cm under height. Why?

### Q4. Coining it again

Move one coin to make a letter L that has four coins in each stroke of the letter.



### Creative from the start

Climate change, poverty and disease are problems that will need creative solutions devised by our descendants. Stimulate creativity through persistence, changing your location or clothes, napping, laughing or listening to opinion.

### Q5. Something with your coffee, sir?

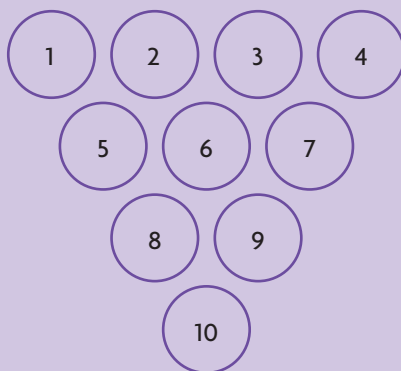
When a customer put sugar in his coffee, something floated to the surface, so he asked the waiter for a fresh coffee. As soon as he sipped his replacement coffee, the customer knew that the waiter had simply removed the object and given him back the original coffee. How did the customer know this?

### Q6. His last words...

The body had a gunshot wound near the temple. There was a gun near his right hand and a dictaphone near his left. Pressing 'play', the policeman heard "I can't go on" followed by a gun shot. The policeman immediately called his station to report a murder. Why?

### Q7. Ups and downs

Make the triangle point upwards by moving only three coins.



### Q8. Grow up, Grandad

“Grow up, Grandad.” A five-year-old granddaughter is teasing her grandfather, but she needs to wait a while because it will be five years before her grandad is as old as her dad. How can this be?

### Q9. Any two for tennis?

A man and his wife went out to play tennis. They agreed to play singles. Best of three sets. On their return, their son asked: “Who won?” Simultaneously, both parents replied: “I did.” Which one of them was lying?

### Q10. Deal or no deal

You are dealing clockwise for a game of bridge but you lose your place. Without counting cards, how can you still make sure everyone gets the cards they would have got?

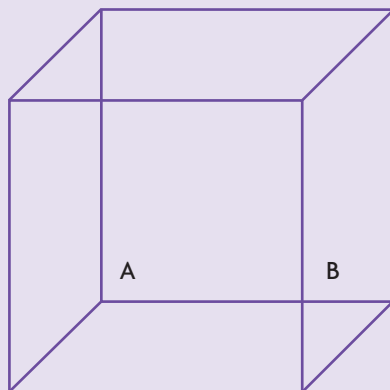
### Collect information

If you want to feed your creative self, don't box information up or store it in drawers as it will soon be forgotten. Make piles of notes and spread them across your work surface so you can refer to them easily. Extract all the information you need and then immerse yourself in your writing, painting, building or designing without distraction.



### Q11. A neurobic cube

Practise viewing this cube from the top and then from the bottom. Alternate your perspective as quickly as you can. Try to make it move 20 times in 20 seconds. (Hint: try getting the line AB to come towards you, then move away again.)



### Q12. Don't do it, don't... Too late

You are pleased with your new 20th-floor high-rise city apartment with river views. It is good to have light and the view across the city without the noise and smell of the city below you. Your apartment has a balcony, but the apartments below do not. One night, standing out on your balcony, you are horrified to look down and see a neighbour from the floor below standing on the window ledge. You nearly vomit with vertigo and before you can shout, "Don't...!" she jumps. She lands, pitches, and is still. Shortly afterwards, she gets up, straightens her skirt, fluffs her hair and does not appear to be marked in any way. How did she do this? (She doesn't have a parachute.)

### Q13. Believe it or knot?

How can you take hold of each end of a tie in separate hands and tie a knot in it without letting go of either end of the tie?

### Constructive criticism

If you need approval, admiration and applause, ask people what they like most about your work, then what they like least, and finally what they would like to see more of. Sandwich any bad news between the good.

### Tips for creative thinking

Keep your phone or a pad and pencil at your desk, by the bed and in the car. If a creative thought comes to you, jot it down before it gets forgotten. Move everything – from your office chair to larger pieces of furniture – to gain a new perspective. If you have spare time, write, paint or sing, and then aim to put time aside for your new creative self. If your creative brain isn't delivering, take a break and go for a walk. Set and stick to deadlines: the extra pressure often allows you to find creative solutions.

### Q14. Time you knew

If a clock takes two seconds to chime two o'clock, how long will it take to chime at three o'clock?

### Q15. Laterally speaking

If TSIHIMM are the first letters of the series I have in my mind, what are the first letters of the series you have in your mind?

### Q16. Slow cars and fast birds

Two cars are heading towards each other (not on the same side of the road) at an average of 50kph. When they are exactly 100 kilometres apart, a bird leaves one and flies towards the other at an average speed of 76.5kph. When it arrives at the other car it immediately turns and flies back to the first car and so on. How far will the bird have flown by the time the cars pass each other?

### Q17. There's a man at the door

You see a man approaching your front door, so you enter the kitchen and remove a knife from the cutlery drawer. The man knocks on your door and asks for a drink of water but you whip out the knife and hold it to his throat. After a few moments, he cracks a smile, thanks you for your help and leaves looking pleased. You also feel good. Why?

# VERBAL THINKING



## Introduction

Words have the power to alter the chemical balance in the brain and the physical state of the body. Most of our verbal skills develop in the left-hand side of the brain, which is also the side that governs how cheerful or optimistic we feel. Visual images are handled by the right-hand side, so keeping people's attention is easier when you use words that conjure up the big picture in the mind of the listener.

We use three areas of the brain when in conversation. They link the words we're looking for with smell, colour and sound, while also preparing back-up synonyms in case we can't think of the correct word. The linguistic centres in our brains function better with increased oestrogen levels, which is why women usually display a superior command of language.

### Q1. Climb the ladder

Climb to the top of the ladder by changing one letter at a time, starting from the word at the bottom.

TACT	YEAR	SPAR
DISH	BOON	QUIT
A	B	C

### Q2. What a pain

Use every letter to fit 10 words into this 5 × 5 square.

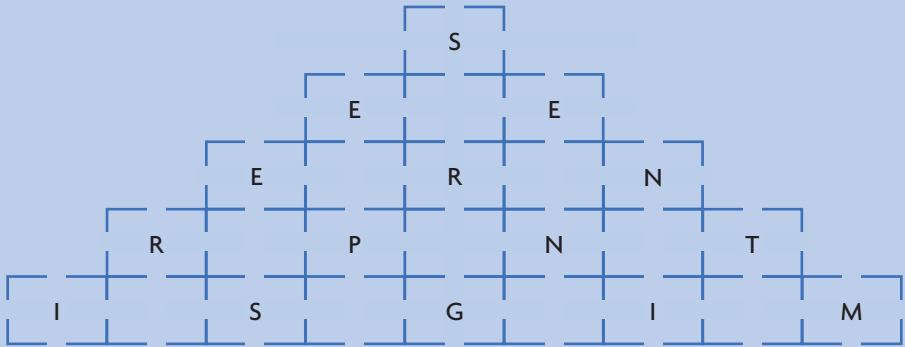
G N G E D  
 R L D S E  
 A O A N D  
 D V M R I  
 E E O A E


### Talk to me

Our brains develop through activities that require several areas to interact. Watching TV and reading don't engage as many centres as thinking aloud or having a detailed conversation with someone. We can increase our cognitive capacity more by talking and listening than by relying on screen-based activities.

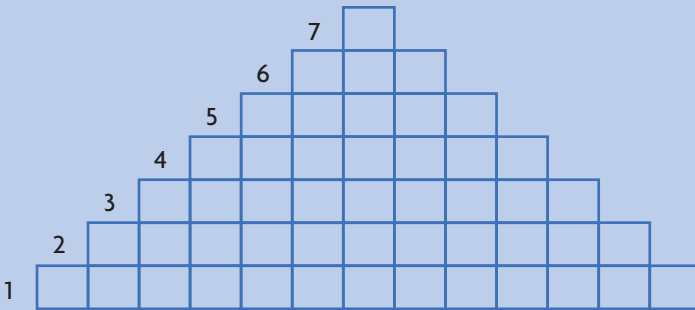
### Q3. A(maze)ing letters are misleading

What 15-letter word can you make from the letters in the maze? (You may only enter each room once).



### Q4. Pyr(amid): what is the central word at issue in this pyramid?

1. The disrepair for which a leaving tenant is liable.
2. Will make it go faster if you can find the vehicle.
3. You can keep it if you take a cold hard view of preservation.
4. The first step to creativity.
5. Uncoil a rope to hear the singing.
6. Confused relatives make a mark.
7. Reptilian sibilant.





### Q5. All the sevens

The following are all clues to seven-letter words.

1. Propels a sailing ship with nearly a metre start.
2. You can wash up in the beginning before moving smartly down the alley.
3. First sign of too much fat in a Spanish sailing ship.
4. This US state names Mr Jones.
5. First signs of becoming a cattle thief.
6. Start by floating to the top of the house.
7. A vital start to healthy food.
8. Initial kernel leads to argument.
9. One begins a superb sound chemical.
10. Finally then the audition commends.
11. The young man starts moving the liquid.
12. The stare allows you to lace her up.

### Q6. Five in a row

- A. Which long-awaited word has five vowels in a row?
- B. Which magic word has five consonants in a row?

### Q7. Only the lonely

What's a weird five-letter word with only one consonant?

### Verbal reasoning tests

A decline in literacy standards has forced many employers to ask recruitment consultants to screen candidates using psychometric tests. To improve your chances, practise questions that involve synonyms, antonyms, double meanings, missing words, linked words, analogies, redundant and often-mistaken words.

### Q8. Six pack

Which rock-solid word contains the same vowel six times?

### Q9. Spell checks

1. Japanese dress: k \_\_\_\_\_
2. Rainbow-coloured: i \_\_\_\_\_
3. To protect from disease: i \_\_\_\_\_
4. To refine: r \_\_\_\_\_
5. A chemical disliked by moths begins with a small sleep: n \_\_\_\_\_
6. To see or testify: w \_\_\_\_\_
7. A blushing discomfort: e \_\_\_\_\_
8. Flustered: h \_\_\_\_\_
9. To measure: g \_\_\_\_\_
10. A root vegetable that sort of rhymes with tomato: p \_\_\_\_\_



**Q10. Pairs**

Which pairs go nicely together?

mince	honey	blackcurrant	scotch	cheese	straw	
chocolate	pepper	pie	beef	comb	egg	cake
mint	corn	paper	jelly	dark	berries	rice

**Q11. Always a crossed word**

Cryptic crosswords help train the brain. Most clues have two parts: the definition and peripheral coded words.

**Anagrams:** look for words like ‘wild’ or ‘scrambled’. What are the following?

- A. Wild West Soup (4)
- B. Noise of train disturbs slumber (7)

**Double meanings:** where words have two meanings, you may get both.

- A. Keeping an eye on the timepiece (5)
- B. Tidy tree (6)

**Buried words:** look for ‘housed in’ or ‘part of’ when the word is made from letters in other words.

- A. Money to wait in comfort for trial in the Old Bailey (4)
- B. The squat top man hid between two police officers (3)

**Backwards:** look for ‘back’ or ‘retro’.

- A. Intelligent trams go backwards (5)
- B. Rejected room is high and open to the elements (4)

**Q12. Groan up words**

Which of the definitions goes with which of the groan words?

1. Abbreviated parent.
2. Joint of baby goat.
3. An even chance of a sell-out.
4. A weapon for recycling.
5. American symbol (sic).
6. Snug and eye.
7. A mynah bird with clipped wings.

**Groan words:**

- A. Parole.
- B. Illegal.
- C. Kidney.
- D. Minimum.
- E. Shotgun.
- F. Spy.
- G. Walkie talkie.

# CROSSWORD

## TELEGRAPH TOUGHIE



### Introduction

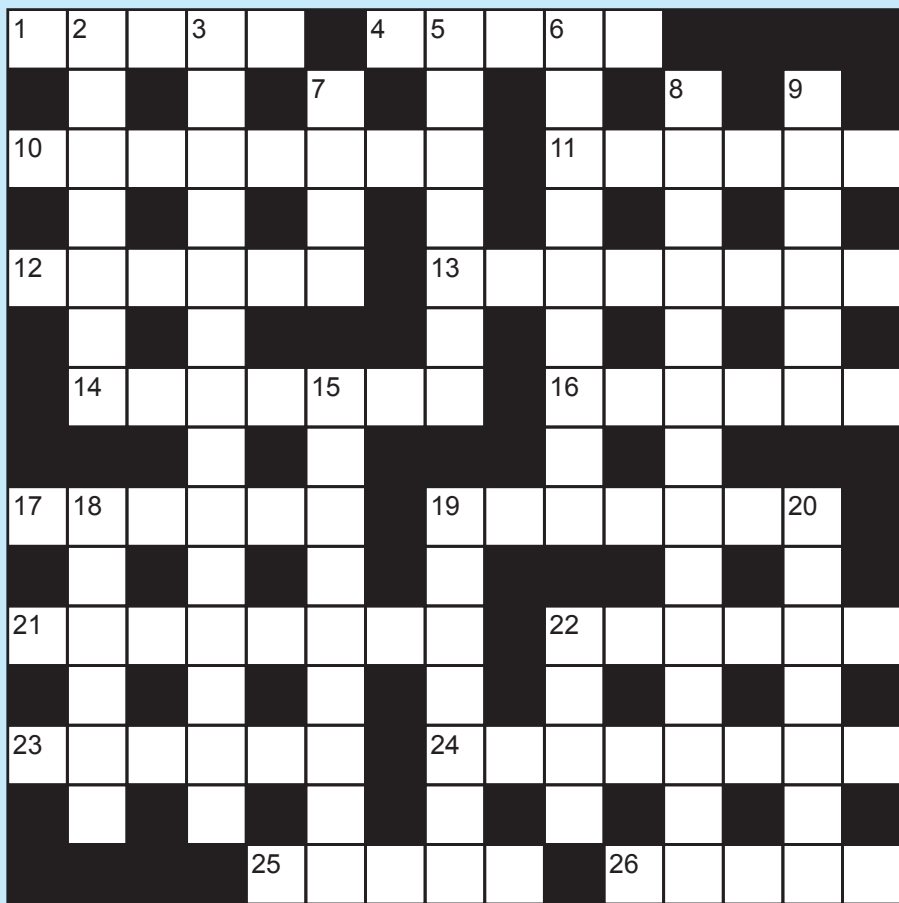
The normal Telegraph Toughie week runs from Tuesday to Friday and usually gets progressively harder. This special Sunday Toughie is a little trickier than the back-page Telegraph crossword. It was compiled by one of our most popular setters, Dada, otherwise known as John Halpern, author of *The Centenary of the Crossword*. The puzzle has a nice selection of anagrams and double definitions, along with some witty cryptic definitions (where we appear to be talking about one thing but the answer is another subject entirely). Good luck unravelling it all.

#### Across

- 1 Criticism for the cane? (5)
- 4 Directors yawning out loud? (5)
- 10 Both sides of the field, sometimes (2,3,3)
- 11 Motorist's club (6)
- 12 Bubbling hot stews covered by cook (6)
- 13 First of crooks holds up a Magnum, perhaps? (8)
- 14 Greeting wife, different embraces creepy for a start (7)
- 16 Run through composition that's about right (6)
- 17 I'm disappointed, having two mummies? (3-3)
- 19 Fed and watered lion, perhaps, taking third of steak raw? (7)
- 21 Doctor is around the old fossil (8)
- 22 Unlimited mice infesting home? That's most delightful! (6)
- 23 State in Canada venerated in retrospect (6)
- 24 Drink rum if pirate! (8)
- 25 Flat that may be knocked over? (5)
- 26 Grind last of embrocation into cut (5)

#### Down

- 2 Basis for 20th-century composition having 'Emperor' in attendance? (4,3)
- 3 Legal legwork? (14)
- 5 Copper possibly removed, one adding decoration (7)
- 6 VIP might be seen on this favourite at Teesside race meeting? (3,6)
- 7 Right-wing, a choice of extremists in theory? (4)
- 8 Drunken compiler faints, one over the eight perhaps? (6,8)
- 9 Referring to a system in force, not entirely absurd (6)
- 15 Old charts showing spread of apartheid (3,6)
- 18 One of the Manchester teams in league (6)
- 19 Flowers in bouquet droop in middle (7)
- 20 Sack the girl from hell? (7)
- 22 Trotsky coming over for Christmas! (4)



**Solution on page 28**

# SUDOKU



## Introduction

People often wonder whether practising Sudoku puzzles increases their brain power. The studies conducted so far back up the claim that solving the grids stimulates the areas in the brain that support memory as well as numerical, visual, emotional and critical thinking. When patterns emerge and fragments of information are recalled in 30 regions within the cerebral cortex, new connections are forged in the hippocampus (the part of the brain associated with memory). As you practise the puzzles, the myelin surrounding the neurons thickens, which improves the speed and accuracy of your thoughts.

The Sudoku puzzles on the following pages will also stimulate the parts of your brain that deal with emotional thinking. This helps you to manage impatience, frustration, disappointment and competitive pressure.

## Beginner

### Q1.

7					1	6		
		3		5			8	
	6	8		7	9			
2			6			4	9	
	9	7			5			2
			9	4		8	7	
	5			1		9		
		4	5					1

Q2.

5			7					
1				6		5		9
					9	1	2	
2		5			6		9	
	8						4	
	9		1			6		3
	4	1	9					
8		2		4				7
					5			2

Q3.

		8				4	7	
	2		3					9
		9	2	6			3	
				3				8
3			7		1			4
5				2				
	4			5	3	8		
8					6		4	
	6	3				5		



**Intermediate**  
**Q4.**

		9	2	6	8			
2	3			5				
	7		3					
	1	2						8
	8						7	
5						4	1	
					3		5	
				1			6	2
			7	2	4	8		

**Q5.**

		2	8		9		7	
						6	8	9
				5				4
2			5			3		
	7	6				1	5	
		8			2			7
7				8				
8	4	3						
	6		7		1	8		

Advanced  
Q6.

7	9	8	3					
1					6			9
		6					2	
		4	6			5		
			5		8			
		9			1	3		
	3					8		
8			1					7
					3	4	6	1

Q7.

		2		4	7			5
	5				9	4	7	
			5			1		
	1	4		5				
	6						4	
				7		2	3	
		1			3			
	4	3	9				6	
9			6	2		3		

# MEMORY WORKOUT



## Introduction

In 2011, University College London established that the posterior hippocampus of cab drivers taking the gruelling 'Knowledge' test increased in size, furnishing them with vastly improved spatial memory. This part of the brain is one of the few where new cells can grow so it offers hope for all adults trying to learn and remember new skills.

### Q1. Try it now: Ten elements

Time limit: 5 minutes

Try to remember the first 10 elements of the periodic table by setting a backdrop to a story. In this example, the story happens in and around a laboratory, but you can change this to any location you like. You will also need to create an image for each word in your mind, such as:

1. Hydrogen – bomb
2. Helium – balloon
3. Lithium – leaves
4. Beryllium – bee
5. Boron – boar
6. Carbon – car
7. Nitrogen – nitrous
8. Oxygen – oxygen mask
9. Fluorine – toothpaste
10. Neon – strip light

You can now imagine a story where all these elements are present: you walk into a laboratory holding a bomb and throw it into a hot air balloon. As it rises and explodes, thousands of leaves fall to the ground covering a bee, which then stings a boar.

The boar runs at you but you manage to get into a car before it smashes the door. You press the nitrous button but you end up going so fast that an oxygen mask drops down. When you stop, you take the tube of toothpaste on the dashboard and squirt it onto a neon light.

When you become more familiar with the techniques, you can dial up the intensity or use different methods to act out the scenarios. Soon the information you need (the names of the elements) will be embedded in your memory.

### Q2. Try it now: Numbers in your world

Time limit: 5 minutes

- Identify the key areas in your life where having the ability to memorise numbers would benefit you in some way. Start with your personal life, then think about your current job and finally move on to focusing on your future. Imagine the skills you will need to achieve your goals.
- Take five minutes to capture these thoughts.



### Q3. Try it now: The pair game

Using the relaxation and concentration techniques of your choice, try to get into a focused state (with practice you will be able to do this almost instantaneously).

Look at the first pair of words and let an image for each word come into your mind. Go for the first natural image that appears. If it doesn't appear straight away, use your questioning skills to figure out what would be a good sound-image.

Once you have an image for each word, associate them together: for krypton + plug, you may imagine Superman wearing a plug made of kryptonite and trying to throw it off before he collapses.

Use your imagination to intensify the images and engage your senses. You could become Superman and physically act out the scene. Finally, repeat the words aloud 3-5 times while focusing on the image. This is vital for associating the words with the image.

Give yourself five minutes to play this game. At the end you will be tested to see how many pairs of words you remember. When you read one of the words, you need to respond with its corresponding pair. What, for example, is the pair word for 'plug'?

krypton + plug

pyramid + camera

laptop + ribbon

speaker + frustration

phone + sing

pencil + trumpet

cola + fast

establish + no

lightning + green

soft + consult

friend + armour

weights + sea

gift + product

radio + Chris

section + blow

#### Write down the correct word next to its pair:

consult

camera

laptop

section

sing

pencil

cola

krypton

no

lightning

Chris

armour

sea

gift

frustration



### Q4. The peg list

One of the simplest examples of a memory network is the peg list, which draws on the idea that you can ‘hang’ items on a virtual peg. In real terms, you are simply creating an association between the peg (node) and the item you wish to remember.

- |           |             |
|-----------|-------------|
| 1. Feet   | 6. Chest    |
| 2. Knees  | 7. Neck     |
| 3. Thighs | 8. Face     |
| 4. Behind | 9. Hair     |
| 5. Waist  | 10. Ceiling |

As you can see, it uses different parts of the body as visual pegs. Associating information you wish to remember with each one of these images allows you to memorise rapidly and recall in or out of sequence.

#### Try it now: 60-second challenge

Time limit: 1 minute

First, memorise the body system using the process above. Then put it into action by remembering some simple information. Associate the following 10 items with the body’s visual nodes. Try to do this within 60 seconds. Here are some examples, but you should try your own first:

- |                         |                        |
|-------------------------|------------------------|
| 1. Feet and glass       | 6. Chest and ice cream |
| 2. Knees and phone      | 7. Neck and spanner    |
| 3. Thighs and lightbulb | 8. Face and statue     |
| 4. Behind and candle    | 9. Hair and spaghetti  |
| 5. Waist and boat       | 10. Ceiling and plant  |

#### Reference story examples

- |   |  |
|---|--|
| 1. Huge hairy feet stepping on glass                              | 7. A big metal spanner attaching bolts to your neck      |
| 2. A shiny red phone tying your knees together and ringing loudly | 8. Your face is made out of marble like a statue         |
| 3. Lightbulbs attached to your thighs flashing on and off         | 9. Your hair is made out of spaghetti with lots of sauce |
| 4. A candle burning your behind                                   | 10. Tropical plants are growing from the ceiling         |
| 5. An elaborately designed boat sailing around your waist         |  |
| 6. Freezing ice-cream poured over your chest                      |  |

Notice how the reference stories engage your senses: your feet are not just stepping on glass, they are also huge and hairy. Engaging your senses makes the image more memorable, so the same applies to the shiny phone ringing loudly.

# ANSWERS

## IQ WORKOUT



**Q1.** There is no distance between the poles. They must be touching each other because the 12-foot rope is hanging six feet (8-2) vertically.

**Q2.** Water. (H to O = H<sub>2</sub>O)

**Q3.** One realised he must have a black mark. For all three to raise their hands, at least two had to have black marks. If the winner could see two black marks, they all had black marks. If he could only see one, the other person with the black mark could only have raised his hand by looking at him.

**Q4.** The car was seven years old when the new engine was fitted: the car is now 28 years old and the engine is 21, so when the car was 21 the engine was 14.

**Q5.** Place the first plank diagonally across the corner of the moat, and the second from the centre of the first plank to the island. It reaches with 11cm to spare.

**Q6.** 40,320. (The first knight can go in eight places, the second in seven places, the third in six places etc., hence  $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ .)

**Q7.** 32. (The total number of chests less one.)

**Q8.** £2.00.

**Q9.** 3 chances in 4, i.e. the reverse of his chance of picking two whites (1 in 4). As there are two boxes, each of which contains four black balls and four white balls, the chance of him picking at least one black ball is one minus the chance of him picking two white balls.

**Q10.** Rotate the pool through 45° so that the trees are at the centre of the elongated sides. Extend the sides until they are 42.426 metres long.

# ANSWERS

## CREATIVE THINKING



**Q1.** The book is from an encyclopedia set. He has chosen the edition from HOW through to HUG alphabetically.

**Q2.** Snow White.

**Q3.** Because I am overweight for a person of my height.

**Q4.** Take the end coin from the bottom row and place it on the corner coin.

**Q5.** The customer put another sugar in his coffee so it was too sweet.

**Q6.** A suicide victim could not rewind the tape, or it was a woman's voice.

**Q7.** Move coin 10 to the top, then coin 1 next to 8 and coin 4 next to 9.

**Q8.** This is her mother's father.

**Q9.** Neither. They played different opponents, not each other.

**Q10.** Start with yourself and deal anticlockwise from the bottom of the pack.

**Q11.** No solution needed.

**Q12.** She jumped back into her own living room.

**Q13.** Fold your arms. Grip one end of the tie with your left hand and the other with your right hand. Unfold your arms.

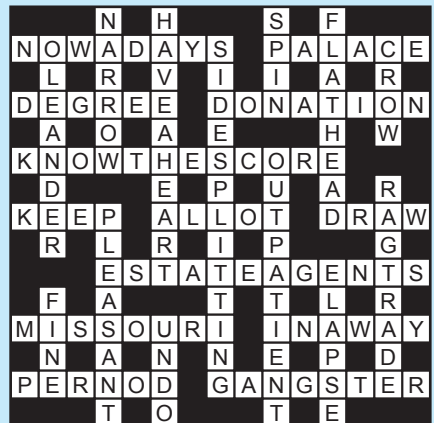
**Q14.** Four seconds. (If it takes two seconds to chime two o'clock, the interval between chimes must be two seconds.)

**Q15.** TSYHIYM are the first letters of The Series You Have In Your Mind

**Q16.** 76.5km. The bird flies at an average of 76.5kph until the cars meet, which takes an hour.

**Q17.** The man was your neighbour who often suffers from hiccups. The shock you gave him cured the hiccups.

### TELEGRAPH TOUGHIE CROSSWORD SOLUTION



# VERBAL THINKING

**Q1.**

TACT	YEAR	SPAR
FACT	NEAR	SPAN
FAST	BEAR	SPIN
FIST	BOAR	SPIT
FISH	BOOR	SUIT
DISH	BOON	QUIT
A	B	C

**Q2.** Words start from the top down and from the left to right.

G	L	A	R	E
R	O	M	A	N
A	V	O	I	D
D	E	N	S	E
E	D	G	E	D

**Q3.** MISREPRESENTING.

**Q4.** SNEEZED. (7 = S; 6 = ink (kin confused); 5 = opera (uncoil a rope); 4 = immerse; 3 = freezable; 2 = accelerator (locate racer); 1 = dilapidations.)

**Q5.**

- |            |             |
|------------|-------------|
| 1. YARDARM | 7. ORGANIC  |
| 2. BOWLING | 8. NUTCASE  |
| 3. GALLEON | 9. ACETONE  |
| 4. INDIANA | 10. ENDEARS |
| 5. RUSTLER | 11. LADLING |
| 6. RAFTERS | 12. EYELETS |

**Q6.** A. Queueing. B. Witchcraft.

**Q7.** Eerie.

**Q8.** Indivisibility.

**Q9.**

- |                 |                   |
|-----------------|-------------------|
| 1. Kimono.      | 6. Witness.       |
| 2. Iridescent.  | 7. Embarrassment. |
| 3. Inoculate.   | 8. Harassed.      |
| 4. Rarefy.      | 9. Gauge.         |
| 5. Naphthalene. | 10. Potato.       |

**Q10.** Mince pie, honeycomb, blackcurrant jelly, scotch egg, cheesecake, strawberries, dark chocolate, peppermint, corn beef, rice paper.

**Q11.**

**Anagrams**

- A. Stew  
B. Rumbles

**Double meanings**

- A. Watch  
B. Spruce

**Buried words**

- A. Bail  
B. CEO (squat here means shortened abbreviation).

**Backwards**

- A. Smart (trams backwards)  
B. Moor (reject = send back)

**Q12.** 1 = D, 2 = C, 3 = A, 4 = E, 5 = B, 6 = F, 7 = G.

# ANSWERS

## SUDOKU



Q1

7	4	9	8	2	1	6	5	3
1	2	3	4	5	6	7	8	9
5	6	8	3	7	9	1	2	4
2	1	5	6	3	7	4	9	8
3	8	6	2	9	4	5	1	7
4	9	7	1	8	5	3	6	2
6	3	1	9	4	2	8	7	5
8	5	2	7	1	3	9	4	6
9	7	4	5	6	8	2	3	1

Q2

5	2	9	7	1	4	3	8	6
1	3	4	2	6	8	5	7	9
6	7	8	3	5	9	1	2	4
2	1	5	4	3	6	7	9	8
3	8	6	5	9	7	2	4	1
4	9	7	1	8	2	6	5	3
7	4	1	9	2	3	8	6	5
8	5	2	6	4	1	9	3	7
9	6	3	8	7	5	4	1	2

Q3

6	3	8	5	1	9	4	7	2
1	2	5	3	4	7	6	8	9
4	7	9	2	6	8	1	3	5
2	1	4	6	3	5	7	9	8
3	8	6	7	9	1	2	5	4
5	9	7	8	2	4	3	6	1
7	4	1	9	5	3	8	2	6
8	5	2	1	7	6	9	4	3
9	6	3	4	8	2	5	1	7

Q4

1	5	9	2	6	8	3	4	7
2	3	4	1	5	7	6	8	9
6	7	8	3	4	9	1	2	5
3	1	2	4	7	6	5	9	8
4	8	6	5	9	1	2	7	3
5	9	7	8	3	2	4	1	6
7	2	1	6	8	3	9	5	4
8	4	3	9	1	5	7	6	2
9	6	5	7	2	4	8	3	1

Q5

4	3	2	8	6	9	5	7	1
1	5	7	2	3	4	6	8	9
6	8	9	1	5	7	2	3	4
2	1	4	5	7	6	3	9	8
3	7	6	4	9	8	1	5	2
5	9	8	3	1	2	4	6	7
7	2	1	6	8	3	9	4	5
8	4	3	9	2	5	7	1	6
9	6	5	7	4	1	8	2	3

Q6

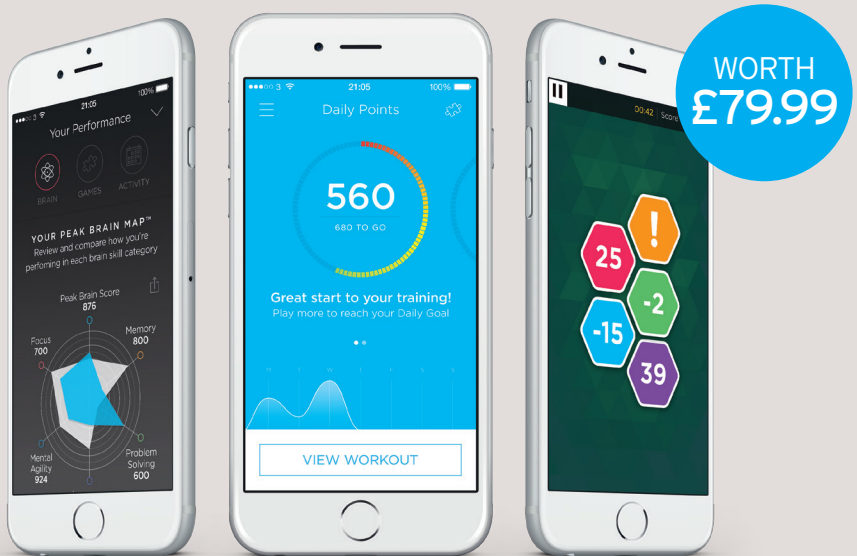
7	9	8	3	1	2	6	4	5
1	2	3	4	5	6	7	8	9
4	5	6	7	8	9	1	2	3
2	1	4	6	3	7	5	9	8
3	6	7	5	9	8	2	1	4
5	8	9	2	4	1	3	7	6
6	3	1	9	7	4	8	5	2
8	4	2	1	6	5	9	3	7
9	7	5	8	2	3	4	6	1

Q7

8	3	2	1	4	7	6	9	5
1	5	6	2	3	9	4	7	8
4	7	9	5	6	8	1	2	3
2	1	4	3	5	6	7	9	8
3	6	7	8	9	2	5	4	1
5	9	8	4	7	1	2	6	6
6	2	1	7	8	3	9	5	4
7	4	3	9	1	5	8	6	2
9	8	5	6	2	4	3	1	7

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