

# Can We Hold Back the Flood?

- A. LAST winter's floods on the rivers of central Europe were among the worst since the Middle Ages, and as winter storms return, the spectre of floods is returning too. Just weeks ago, the river Rhône in south-east France burst its banks, driving 15,000 people from their homes, and worse could be on the way. Traditionally, river engineers have gone for Plan A: get rid of the water fast, draining it off the land and down to the sea in tall-sided rivers re-engineered as high-performance drains. But however big they dig city drains, however wide and straight they make the rivers, and however high they build the banks, the floods keep coming back to haunt them, from the Mississippi to the Danube. And when the floods come, they seem to be worse than ever.**
- B. No wonder engineers are turning to Plan B: sap the water's destructive strength by dispersing it into fields, forgotten lakes, flood plains and aquifers. Back in the days when rivers took a more tortuous path to the sea, floodwaters lost impetus and volume while meandering across flood plains and idling through wetlands and inland deltas. But today the water tends to have an unimpeded journey to the sea. And this means that when it rains in the uplands, the water comes down all at once. Worse, whenever we close off more flood plain, the river's flow farther downstream becomes more violent and uncontrollable. Dykes are only as good as their weakest link – and the water will unerringly find it.**
- C. Today, the river has lost 7 per cent of its original length and runs up to a third faster. When it rains hard in the Alps, the peak flows from several tributaries coincide in the main river, where once they arrived separately. And with four-fifths of the Lower Rhine's flood plain barricaded off, the waters rise ever higher. The result is more frequent flooding that does ever-greater damage to the homes, offices and roads that sit on the flood plain. Much the same has happened in the US on the mighty Mississippi, which drains the world's second-largest river catchment into the Gulf of Mexico.**

**D. The European Union is trying to improve rain forecasts and more accurately model how intense rains swell rivers. That may help cities prepare, but it won't stop the floods. To do that, say, hydrologists, you need a new approach to engineering, not just Agency – country £1 billion – puts it like this: “The focus is now on working with the forces of nature. Towering concrete walls are out, and new wetlands are in.” to help keep London's upstream and reflooding 10 square kilometres outside Oxford. Nearer to London it has spent £100 million creating new wetlands and a relief channel across 16 kilometres.**

**E. The same is taking place on a much grander scale in Austria, in one of Europe's largest river restorations to date. Engineers are regenerating flood plains along 60 kilometres of the river Drave as it exits the Alps. They are also widening the river bed and channeling it back into abandoned meanders, oxbow lakes and backwaters overhung with willows. The engineers calculate that the restored flood plain can now store up to 10 million cubic metres of floodwaters and slow storm surges coming out of the Alps by more than an hour, protecting towns as far downstream as Slovenia and Croatia.**

**F. “Rivers have to be allowed to take more space. They have to be turned from flood-chutes into flood-foilers,” says Nienhuis. And the Dutch, for whom preventing floods is a matter of survival, have gone furthest. A nation built largely on drained marshes and seabed had the fright of its life in 1993 when the Rhine almost overwhelmed it. The same happened again in 1995 when a quarter of a million people were evacuated from the Netherlands. But a new breed of “soft engineers” wants our cities to become porous, and Berlin is their governed by tough new rules to prevent its drains from becoming overloaded after heavy rains. Herald Kraft, an architect working in the city, says: “We now see rainwater as giant Potsdamer Platz, a huge new commercial redevelopment by DaimlerChrysler in the heart of the city.**

**G. Los Angeles has spent billions of dollars digging huge drains and concreting river beds to carry away the water from occasional intense storms. “In LA we receive half the water we need in rainfall, and we throw it away. Then we spend**

hundreds of millions to import water,” says Andy Lipkis, an LA environmentalist who kick-started the idea of the porous city by showing it could work on one house. Lipkis, along with citizens groups like Friends of the Los Angeles River and Unpaved LA, want to beat the urban flood hazard and fill the taps by holding onto the city’s floodwater. And it’s not just a pipe dream. The authorities this year launched a \$100 million scheme to road-test the porous city in one flood-hit community in Sun Valley. The plan is to catch the rain that falls on thousands of driveways, parking lots and rooftops in the valley. Trees will soak up water from parking lots. Homes and public buildings will capture roof water to irrigate gardens and parks. And road drains will empty into old gravel pits and other leaky places that should recharge the city’s underground water reserves. Result: less flooding and more water for the city. Plan B says every city should be porous, every river should have room to flood naturally and every coastline should be left to build its own defences. It sounds expensive and utopian, until you realise how much we spend trying to drain cities and protect our watery margins – and how bad we are at it.

### Questions 1-6

The Reading Passage has seven paragraphs A-G.

Which paragraph contains the following information?

Write the correct letter A-G, in boxes 1-6 on your answer sheet.

1. A new approach carried out in the UK.
2. Reasons why the twisty path and dykes failed
3. Illustration of an alternative Plan in LA which seems much unrealistic
4. The traditional way of tackling flood
5. The effort made in the Netherlands and Germany
6. One project on a river benefits three nations

### Questions 7-11

Complete the summary below.

Write **NO MORE THAN TWO WORDS** for each answer.

Write your answers in boxes 7-11 on your answer sheet.

Flood makes river shorter than it used to be, which means faster speed and more damage to constructions on a flood plain. Not only European river poses such threat but the same things happens to the powerful 7..... in the US.

In Europe, one innovative approach carried out by UK's Environment Agency, for example, a wetland instead of concrete walls in generated not far from the city of 8..... to protect it from flooding.

In 1995, Rhine flooded again and thousands of people left the country of 9..... A league of engineers suggested that cities should be porous, 10..... set a good example for others. Another city devastated by heavy storms casually is 11....., though its government pours billions of dollars each year in order to solve the problem.

**Questions 12-13**

Choose **TWO** correct letters, write your answers in boxes 12-13 on your answer sheet.

What **TWO** benefits will the new approach in the UK and Austria bring to us according to this passage?

- A We can prepare before the flood comes
- B It may stop the flood involving the whole area
- C Decrease strong rainfalls around the Alps simply by engineering constructions
- D Reserve water to protect downstream towns
- E Store tons of water in the downstream area

# The History of pencil

A. The beginning of the story of pencils started with lightning. Graphite, the main material for producing a pencil, was discovered in 1564 in Borrowdale in England when lightning struck a local tree during a thunder. Local people found out that the black substance spotted at the root of the unlucky tree was different from burning ash of wood. It was soft, thus left marks everywhere. The chemistry was barely out of its infancy at the time, so people mistook it for lead, equally black but much heavier. It was soon put to use by locals in marking their sheep for signs of ownership and calculation.

B. Britain turns out to be the major country where mines of graphite can be detected and developed. Even so, the first pencil was invented elsewhere. As graphite is soft, it requires some form of the encasement. In Italy, graphite sticks were initially wrapped in string or sheepskin for stability, becoming perhaps the very first pencil in the world. Then around 1560, an Italian couple made what are likely the first blueprints for the modern, wood-encased carpentry pencil their version was a flat, oval, more compact type of pencil. Their concept involved the hollowing out of a stick of juniper wood. Shortly thereafter in 1662, a superior technique was discovered by German people: two wooden halves were carved, a graphite stick inserted, and the halves then glued together – essentially the same method in use to this day. The news of usefulness of these early pencils spread far and wide, attracting the attention of artists all over the known world.

C. Although graphite core in pencils is still referred to as lead, modern pencils do not contain lead as the “lead” of the pencil is actually a mix of finely ground graphite and clay powders. This mixture is important because the amount of clay content added to the graphite depends on intended pencil hardness, and the amount of time spent on grinding the mixture determines the quality of the lead. The more clay you put in, the higher hardness the core has.

Many pencils across the world and almost all in Europe are graded on the European system. This system of naming used B for black and H for hard; a pencil's grade was described by a sequence or successive Hs or Bs such as BB and BBB for successively softer leads, and HH and HHH for successively harder ones. Then the standard writing pencil is graded HB.

D. In England, pencils continued to be made from whole sawn graphite. But with the mass production of pencils, they are getting drastically more popular in many countries with each passing decade. As demands rise, appetite for graphite soars. According to the United States Geological Survey (USGS), world production of natural graphite in 2012 was 1,100,000 tonnes, of which the following major exporters are: China, India, Brazil, North Korea and Canada. When the value of graphite was realised, the mines were taken over by the government and guarded. One of its chief uses during the reign of Elizabeth I in the second half of the 16th century was as moulds for the manufacture of cannonballs. Graphite was transported from Keswick to London in armed stagecoaches. In 1751 an Act of Parliament was passed making it an offence to steal or receive "wad". This crime was punishable by hard labour or transportation.

E. That the United States did not use pencils in the outer space till they spent \$1000 to make a pencil to use in zero gravity conditions is, in fact, a fiction. It is widely known that astronauts in Russia used grease pencils, which don't have breakage problems. But it is also a fact that their counterparts in the United States used pencils in the outer space before real zero gravity pencil was invented. They preferred mechanical pencils, which produced fine lines, much clearer than the smudgy lines left by the grease pencils the Russians favoured. But the lead tips of these mechanical pencils broke often. That bit of graphite floating around the space capsule could get into someone's eye, or even find its way into machinery or electronics, causing an electrical short or other problems. But despite the fact that the Americans did invent zero gravity pencils later, they stuck to mechanical pencils for many years.

**F. Against the backcloth of a digitalized world, the prospect of pencils seems bleak. In reality, it does not. The application of pencils has by now become so widespread that they can be seen everywhere, such as classrooms, meeting rooms and art rooms, etc. A spectrum of users are likely to continue to use it into the future: students to do math works, artists to draw on sketch pads, waiters or waitresses to mark on order boards, make-up professional to apply to faces, and architects to produce blueprints. The possibilities seem limitless.**

### **Questions 14-19**

**Complete the sentences below.**

**Write ONE WORD ONLY for each answer**

**Write your answers in boxes 14-19 on your answer sheet.**

**Graphite was found under a 14..... in Borrowdale.**

**Ancient people used graphite to sign possession and number of 15.....**

**The first pencil was graphite wrapped in 16..... or animal skin.**

**In the eighteenth century, the 17..... protect the mines when the value of graphite was realized.**

**During the reign of Elizabeth I, people was condemnable if they 18..... or receive the “was”.**

**Russian astronauts preferred 19..... pencils to write in the outer space.**

### **Questions 20-26**

**Do the following statements agree with the information given in Reading Passage 2?**

**In boxes 20-26 on your answer sheet write**

<b>TRUE</b>	If the statement agrees with the information
<b>FALSE</b>	If the statement contradicts the information
<b>NOT GIVEN</b>	If there is no information on this

20. Italy is probably the first country in the whole world to make pencils.
21. Germany used various kinds of wood to make pencils.
22. Graphite makes a pencil harder and sharper.
23. Pencils are not produced any more since the reign of Elizabeth I.
24. The pencil was used during the first American space expedition.
25. American astronauts did not replace mechanical pencils immediately after the zero-gravity pencils were invented.
26. Pencils are unlikely to be used in the future.



# TV Addiction 2

**A. Excessive cravings do not necessarily involve physical substances. Gambling can become compulsive; sex can become obsessive. One activity, however, stands out for its prominence and ubiquity – the world’s most popular pastime, television. Most people admit to having a love-hate relationship with it. They complain about the “boob tube” and “couch potatoes,” then they settle into their sofas and grab the remote control. Parents commonly fret about their children’s viewing (if not their own). Even researchers who study TV for a living marvel at the medium’s hold on them personally. Percy Tannenbaum of the University of California at Berkeley has written: “Among life’s, more embarrassing moments have been countless occasions when I am engaged in conversation in a room while a TV set is on, and I cannot for the life of me stop from periodically glancing over to the screen. This occurs not only during dull conversations but during reasonably interesting ones just as well.”**

**B. Scientists have been studying the effects of television for decades, generally focusing on whether watching violence on TV correlates with being violent in real life. Less attention has been paid to the basic allure of the small screen – the medium, as opposed to the message.**

**C. The term “TV addiction” is imprecise and laden with value judgments, but it captures the essence of a very real phenomenon. Psychologists and psychiatrists formally define substance dependence as a disorder characterized by criteria that include spending a great deal of time using the substance; using it more often than one intends; thinking about reducing use or making repeated unsuccessful efforts to reduce use; giving up important social, family or occupational activities to use it; and reporting withdrawal symptoms when one stops using it.**

**D. All these criteria can apply to people who watch a lot of television. That does not mean that watching**

television, in itself, is problematic. Television can teach and amuse; it can reach aesthetic heights; it can provide much-needed distraction and escape. The difficulty arises when people strongly sense that they ought not to watch as much as they do and yet find themselves strangely unable to reduce their viewing. Some knowledge of how the medium exerts its pull may help heavy viewers gain better control over their lives.

E. The amount of time people spend watching television is astonishing. On average, individuals in the industrialized world devote three hours a day to the pursuit – fully half of their leisure time, and more than on any single activity save work and sleep. At this rate, someone who lives to 75 would spend nine years in front of the tube. To some commentators, this devotion means simply that people enjoy TV and make a conscious decision to watch it. But if that is the whole story, why do so many people experience misgivings about how much they view? In Gallup polls in 1992 and 1999, two out of five adult respondents and seven out of 10 teenagers said they spent too much time watching TV. Other surveys have consistently shown that roughly 10 percent of adults calls themselves TV addicts.

F. What is it about TV that has such a hold on us? In part, the attraction seems to spring from our biological ‘orienting response.’ First described by Ivan Pavlov in 1927, the orienting response is our instinctive visual or auditory reaction to any sudden or novel stimulus. It is part of our evolutionary heritage, a built-in sensitivity to movement and potential predatory threats.

G. In 1986 Byron Reeves of Stanford University, Esther Thorson of the University of Missouri and their colleagues began to study whether the simple formal features of television – cuts, edits, zooms, pans, sudden noises – activate the orienting response, thereby keeping attention on the screen. By watching how brain waves were affected by formal features, the researchers concluded that these stylistic tricks can indeed trigger involuntary responses and ‘derive their attentional value through the evolutionary significance of detecting

movement ... It is the form, not the content, of television that is unique.'

H. The orienting response many partly explain common viewer remarks such as: "If a television is on, I just can't keep my eyes off it," "I don't want to watch as much as I do, but I can't help it," and "I feel hypnotized when I watch television." In the years since Reeves and Thorson published their pioneering work, researchers have delved deeper. Annie Lang's research team at Indiana University has shown that heart rate decreases for four to six seconds after an orienting stimulus. In ads, action sequences and music videos, formal features frequently come at a rate of one per second, thus activating the orienting response continuously.

I. Lang and her colleagues have also investigated whether formal features affect people's memory of what they have seen. In one of their studies, participants watched a program and then filled out a score sheet. Increasing the frequency of edits (defined here as a change from one camera angle to another in the same visual scene) improved memory recognition, presumably because it focused attention on the screen. Increasing the frequency of cuts – changes to a new visual scene–had a similar effect but only up to a point. If the number of cuts exceeded 10 in two minutes, recognition dropped off sharply.

J. Producers of educational television for children have found that formal features can help to learn. But increasing the rate of cuts and edits eventually overloads the brain. Music videos and commercials that use rapid intercutting of unrelated scenes are designed to hold attention more than they are to convey information. People may remember the name of the product or band, but the details of the ad itself float in one ear and out the other. The orienting response is overworked. Viewers still attend to the screen, but they feel tired and worn out, with little compensation psychological reward. Our ESM findings show much the same thing.

K. Sometimes the memory of the product is very subtle. Many ads today are deliberately oblique: they have an

engaging storyline, but it is hard to tell what they are trying to sell. Afterwards, you may not remember the product consciously. Yet advertisers believe that if they have gotten your attention when you later go to the store you will feel better or more comfortable with a given product because you have a vague recollection of having heard of it.

### Questions 27-30

Do the following statements agree with the claims of the writer in Reading Passage 3?

In boxes 27-30 on your answer sheet, write

- |                  |  |
|------------------|--|
| <b>TRUE</b>      | If the statement is true                       |
| <b>FALSE</b>     | If the statement is false                      |
| <b>NOT GIVEN</b> | If the information is not given in the passage |

27. Even researcher find sometimes it is more interesting in watching TV than talking with others in personal experience
28. Information medium as TV has always been the priority for scientific research.
29. It is partially unscientific to use the term 'TV addiction'.
30. Children do not know why they exercise too little.

### Questions 31-33

Choose **THREE** letters, A-F

Write the correct letters in boxes 31-33 on your answer sheet.

Which **THREE** of the following are benefits of watching TV?

- A** artistic inspiration
- B** family reunion
- C** relieve stress
- D** learn knowledge and education
- E** work efficiency
- F** ease communicative conflict

### **Questions 34-37**

**Look at the following researchers and the list of statements below.**

**Match each researcher with the correct statements.**

**Write the correct letter A-G in boxes 34-37 on your answer sheets.**

**34. Percy Tannenbaum**

**35. Ivan Pavlov**

**36. Byron Reeves and Esther Thorson**

**37. Annie Lang**

### **List of Statements**

- A** It is the specific media formal characteristic that counts.
- B** TV distraction shows a human physical reaction to a new and prompted stimulus
- C** Conveying information is the most important thing.
- D** It is hard to ignore the effects of TV.
- E** Whether people can remember deeper of the content relates to the format.

F The heart rate remains stable when watching.

G Clinically reliance on TV does not meet the criteria of addiction.

### Questions 38-40

Complete the summary below.

Write **NO MORE THAN TWO WORDS** for each answer.

Write your answers in boxes 38-40 on your answer sheet.

The TV is becoming a worldwide 38..... Some people love it and spend a great deal of time watching it. According to some surveys, a small group even claim themselves as 39..... One researcher believes that this attraction comes from our human instinct, described as 40..... which is built-in part of our physiological evolution.