

2 Fresh ideas

Reading

1 Read the article on page 13. Are the sentences true (T), false (F) or is there not enough information given to decide (NG)?

- 1 Albert Einstein became a scientist after being inspired in Bern. _____
- 2 Einstein used experiments to prove his ideas were true. _____
- 3 Lucy Wills' observations revealed the cause of her patients' illness. _____
- 4 Wills had a feeling that Marmite might work. _____
- 5 Akira Kurosawa believed that artists' dreams are especially important. _____
- 6 Salvador Dali had a dream inspired by *Frankenstein*. _____

2 Number the events (a–g) in the order they took place (1–7).

- a _____ Einstein understands the relationship of time, motion and light
- b _____ Wills goes to India
- c _____ Wills uses Marmite as medicine
- d _____ Wills finishes her work in India
- e _____ Kurosawa's *Dreams* is released
- f _____ The Beatles release *Yesterday*
- g _____ *Frankenstein* is published

3 Complete the timeline of the events from Exercise 2.

Year	Event
1 _____	<i>Frankenstein</i> published
1895–2 _____	Einstein studies time, motion, light
3 _____–4 _____	Wills works in India
1930	5 _____
1965	6 _____
7 _____	Kurosawa's <i>Dreams</i> released

How did you get that idea?



The clock tower in Bern, Switzerland that inspired Albert Einstein

The exact timing of the appearance of a fresh idea is mysterious. One minute, it seemingly doesn't exist and the next, it does. It may hit suddenly in a flash of inspiration, or it may grow slowly before finally fully revealing itself. Either way, there's always a moment when the thinker realizes that a great idea has formed. Here are three stories of fresh ideas and how they came into being.

Inspiration

In May 1905, physicist Albert Einstein had been trying for ten years to understand the complex relationship between time, motion and light. The accepted scientific laws of the day couldn't explain the data that physicists were collecting, and the young scientist wanted to solve that problem. Walking in Bern, Switzerland, one day, Einstein looked up at the city's ancient clock tower and was suddenly struck by an idea: if he were travelling away from the clock tower in a streetcar that was going at the speed of light, the clock – and time itself – would appear to stop. This flash of inspiration was a breakthrough. Within weeks, Einstein had completed a paper explaining his theory of time, motion and light using the now-famous equation $E = mc^2$, and opened a door to a new understanding of the laws of nature.

Lucky guess

Between 1928 and 1933, medical doctor Lucy Wills was working in Mumbai, India, trying to understand an illness that was affecting pregnant women. She carefully examined her patients, their living conditions and their diet and came to the conclusion that a deficiency of vitamins A and D might be at the root of the problem. However, further research and tests were inconclusive. In 1930, possibly feeling that she had no more research-based ideas, she tried giving her patients Marmite, a brown salty paste for spreading on toast. The food was considered to be a good source of vitamins, but there was no scientific basis for Wills' decision. To her amazement, the results were remarkable. Although no one knew why, Marmite cured the pregnant women. Wills' demonstration of the power of Marmite was the first step towards the eventual discovery of folic acid, an important element in a healthy diet, especially during pregnancy.

Dreams

Akira Kurosawa is known around the world as one of Japan's most important filmmakers. In a career that lasted 57 years, he directed 30 films. In 1990, near the end of his career, he released a film of eight short stories that the director said were inspired by dreams he'd had over and over again throughout his life. The film was appropriately titled *Dreams*. Many believe that dreams, especially ones that we have more than once, tell us something about our personality – our hopes, our fears, our wishes. Kurosawa turned this into art. He wasn't the first artist to get ideas from dreams. According to former Beatle Paul McCartney, the 1965 song *Yesterday* came to him in a dream. And Salvador Dali described his paintings as 'hand-painted dream photographs'. Finally, Mary Shelley claimed the idea for her 1818 novel *Frankenstein*, written when she was just eighteen, came to her in a dream.

4 Which of these three ways of experiencing fresh ideas described in the article applies to each situation?

	dreams	inspiration	lucky guess
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- 1 Louis Pasteur, the creator of the first vaccine, made an important discovery in 1879 when his assistant made a mistake. Guessing that the mistake might lead to a breakthrough, Pasteur completed the experiment successfully without understanding why it worked. _____
- 2 Of her work, poet Joy Harjo says that ideas for poems arise in her imagination as images, not words. 'I write as a painter. It's almost as if I paint the poems,' she says. _____
- 3 In 1865, as he slept, chemist August Kekule von Stradonitz had a vision of snakes with their tails in their mouths. This led to his understanding of the chemical structure of benzene. _____

Vocabulary

Features and benefits of new ideas

1 Match the beginnings of the sentences (1–8) with the endings (a–h).

- | | |
|----------------------------------|-------|
| 1 An affordable product ... | _____ |
| 2 A luxury ... | _____ |
| 3 An adaptation ... | _____ |
| 4 Infrastructure ... | _____ |
| 5 Cutting-edge technology ... | _____ |
| 6 A corporation ... | _____ |
| 7 An emerging market economy ... | _____ |
| 8 Reverse innovation ... | _____ |

- a ... is the basic systems that allow an organization or country to work properly.
- b ... has a price that isn't too high for most people.
- c ... aims to develop products in emerging markets before developed ones.
- d ... is in the early stages of development.
- e ... is something you enjoy but don't really need.
- f ... is the most modern and up-to-date equipment and ways of doing things.
- g ... is a change that makes something more suitable for a particular situation.
- h ... is a company, or a group of companies, that act as a single organization.

2 Complete the article about a reverse innovation with these words.

adaptation	affordable	corporation
cutting-edge	emerging	infrastructure
luxuries	market	reverse

Consumer goods manufacturer Procter & Gamble created a honey-based cough medicine as a(n) ¹_____ option for emerging market economies. When the company discovered a growing ²_____ for natural remedies in developed economies, the only ³_____ the product required was the packaging. According to David Dintenfass, the global marketing director for the

cough medicine brand, it takes a lot of time and money to create completely new, ⁴_____ products. Any opportunity to take a product developed for a(n) ⁵_____ market to a developed one saves the ⁶_____ the cost of development and allows them to give consumers a low price. This approach is called ⁷_____ innovation. Rather than trying to sell expensive innovative products as ⁸_____ in developing markets, companies create simpler, less expensive everyday products first, then sell them as basic, low-price options in markets with a more advanced economy and technological ⁹_____.

Grammar

Multi-word verbs

1 Complete the conversation with the correct particles.

Uma: Hey, David. I don't usually run ¹_____ you at the bus stop. Why aren't you driving?

David: My car broke ²_____.

Uma: Oh, that's a pain. You rely ³_____ it to visit customers, don't you?

David: Yeah, that's right.

Uma: How are you going to cope ⁴_____ not having a car?

David: I won't have to for very long. The mechanic is going to pick my car ⁵_____ this afternoon and drop another one ⁶_____ for me to use while mine's being repaired.

Uma: Oh, that's good.

- 2 Complete the sentences with these words in the correct order.

back her call it give up it look up
with on get work it on

- How do you _____ your new boss?
- I don't have time for golf so I'm going to _____.
- I didn't finish the report at the office so I'm going to _____ at home.
- If you don't know a word, _____ in the dictionary.
- Nora phoned and wants you to _____ when you have time.

- 3 Rewrite the sentences. Replace the words in bold with a three-word verb that includes the word in brackets.

1 Which options can we **eliminate**? (rid)
Which options can we get rid of?

2 When you develop a new product, you have to **tolerate** some delays and failures. (put)

3 We **encountered** some problems. (against)

4 The new process **reduces** waste. (cut)

5 He suggested that we **stop using** plastic packaging. (away)

Vocabulary

Noun suffixes related to creating ideas

- 1 Complete the words with these endings.

-ation -dom -hood -ity
-ment (x2) -ness -ship

- The probabli_____ of this experiment succeeding is about 50%.
- Clearly stating your goal increases the likeli_____ that you'll get what you want.
- Collabor_____ among scientists doing similar research is common.

- 2 Match the definitions (a-h) with the words you completed in Exercise 1 (1-8).

- A relationship between two people, companies, etc. _____
- How likely something is, often calculated mathematically _____
- The degree to which something can be expected to happen _____
- The feeling of not being interested in anything _____

- Venus and Serena Williams are a famous tennis doubles partner_____.
- If a team lacks aware_____ of problems, good solutions are unlikely.
- We've made a commit_____ to deliver a fresh idea, so we'd better come up with something!
- Allowing your mind to experience bore_____ may enhance creativity.
- People with any involve_____ in developing a new idea should get credit.

- Working together in a pair or group to achieve something _____
- The act of participating in an activity or event _____
- A promise to do something _____
- Knowledge or understanding _____

- 3 Choose the correct option to complete the paragraph about how companies encourage fresh thinking.

Encouraging fresh thinking in the workplace

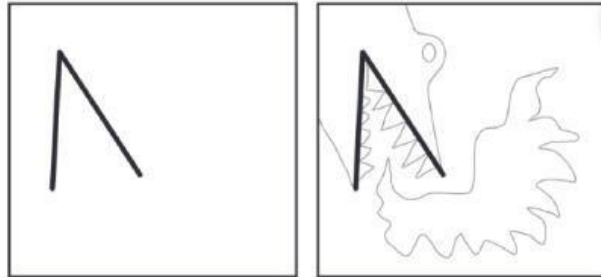
To increase the ¹probability / partnership of employees coming up with new ideas, tech giant Google tries to encourage interaction and ²collaboration / boredom by giving employees the ³likelihood / freedom to visit in-company Google cafés. Technology company 3M encourages its engineers to make ⁴an involvement / a commitment

to spend 15% of their work time on something company-related that interests them personally. This decreases the ⁵collaboration / likelihood of on-the-job ⁶boredom / commitment and very likely deepens workers' ⁷awareness / involvement with projects they really care about. Companies' support of open internal communication encourages ⁸probability / awareness of what other engineers are working on, and they often naturally fall into informal ⁹partnerships / freedom with others who have similar interests.

Listening

- 1  22 Listen to creativity coaches Alina and Fernando speaking to a group of workshop participants. Number the topics (a–f) in the order they talk about them.

- a _____ Creativity is often connected with art
- b _____ Techniques useful for every area of living
- c _____ Creativity coaching = not well known
- d _____ Creativity is seeing what isn't there
- e _____ Everyone needs good ideas
- f _____ Activity: making a picture from a few lines



- 2  23 Listen to the sentences from the creativity workshop. Write the words you hear.

- 1 How many of you _____ knew you could get a creativity coach?
- 2 Maybe you're a writing student _____ on a novel.
- 3 It may seem _____ why you're here.
- 4 Whenever you feel _____ or stuck, creativity can help.
- 5 No matter _____ you do, you come up against problems.
- 6 Creative managers bring teams together to do the best possible _____.
- 7 A bit of creative thinking can help _____ you forward as a parent.
- 8 I promise we aren't going to _____ on the best one.

Focus on

Irreversible word pairs

- 1 Choose the correct option to complete the paragraph.

For me, it's ¹simple and plain / plain and simple: keeping a routine is the best way to be creative. ²Day out, day in / Day in, day out, I wake up early and dress in the dark, which means I sometimes

put my T-shirt on ³back to front / front to back and I usually don't notice until later – but that's all part of the process! When I get to my desk, if it isn't ⁴tidy and clean / clean and tidy I take care of that first. When that's ⁵more or less / less or more organized, I start thinking about the first item on my to-do list.

- 2 Complete the sentences with these words. Use one word from each list.

back	foremost	quiet	shine	tried
first	forth	peace	rain	tested

- 1 I go running come _____ or _____ because that's when I get my best ideas.
- 2 Meditation is a _____ and _____ way to help focus your mind.

- 3 I can't work when there's noise. I need _____ and _____ to be creative.
- 4 For me, creativity is _____ and _____ about problem solving and coming up with good solutions.
- 5 I stand up at least once an hour and walk _____ and _____ in front of my desk a few times to stimulate my mind.

Pronunciation

Understanding consonant clusters across word boundaries

- 2  2.5 Listen and write the words you hear.

- 1 It can be _____ focus.
- 2 We enjoy _____.
- 3 He's usually _____ me.
- 4 They need a _____.
- 5 She's _____ to work too late.
- 6 I keep a guitar _____ my desk.

Writing

- 1 Choose the best option to complete the sentences about causes and results.

- 1 Lots of half-eaten food is left on the outdoor tables. As a result, there have been *more / fewer* rats and mice coming into the area.
- 2 The new schedule means that classes start twenty minutes earlier. Consequently, a lot of students have been *arriving a few minutes late / walking to class*.

- 3 The addition of one more drinks machine would mean twice as many people could buy drinks at once. Therefore, *drinks would be less expensive / queues at break time would be shorter*.
- 4 Some gym members are staying past the end of their booked time, thus causing *over-crowding / longer employee lunch breaks* when people arrive on time for their sessions.
- 5 Turning the unused land into a park would make it an attractive destination, resulting in *lower taxes / an increase in customers* for local businesses.
- 6 The increase in the number of people cycling to the site has led to the bike racks being *unused / completely full*, leaving no safe place to lock bicycles.

2 Match the sections of a proposal (1–5) with the section introductions (a–e).

- 1 Introduction _____
- 2 Current situation _____
- 3 Proposed solutions _____
- 4 Expected outcomes and benefits _____
- 5 Recommendations _____

a In recent months, several miscommunications have occurred that have resulted in wasted time, effort and money.

b Taken together, the above measures would reduce communication overload, encourage clearer communication and feedback, and give everyone access to the latest project information.

c As a next step, we will create a team meeting schedule and set up a well-organized file-sharing system.

d The situation would be improved through a reduction in the use of email, an increase in face-to-face team meetings and improved organization of shared project files.

e This proposal suggests ways of improving communication among team members.