

A

Innovation and invention

Verb	Noun: concept (uncountable)	Noun: thing (countable)	Noun: person
design: to make plans or drawings for how something is to be made	design	a design	a designer
develop: to make a new idea successful, for example by making or improving a product	development	a development	a developer
innovate: to think of new ideas, methods, products, etc.	innovation	an innovation	an innovator
invent: to design and make something for the first time	invention	an invention	an inventor
–	technology: the practical or industrial use of scientific discoveries	a technology	a technologist

countable = you can say *a/an*; uncountable = you can't say *a/an*

B

Research and technology

Hi, I'm Ray and I'm head of **product development** at Lightning Technologies. Lightning makes semiconductors, the components at the heart of every computer. I'm in charge of **research and development (R&D)** at our **research centre** just outside Boston. Our **laboratories** are some of the most **innovative** in the computer industry, and we have made many new discoveries and **breakthroughs**.

I love **technology**, using scientific **knowledge** for practical purposes. The **technology** of semiconductors is fascinating. We are at the **cutting edge** or **leading edge** of semiconductor technology: none of our competitors has better products than us. Everything we do is **state-of-the-art**, using the most advanced techniques available.

Of course, the **hi-tech** products of today become the **low-tech** products of tomorrow. Products that are no longer up-to-date because they use old technology are **obsolete**. It's my job to make sure that Lightning's products never get into that situation.

BrE: research centre
AmE: research center

C

Patents and intellectual property

Information or knowledge that belongs to an individual or company is **proprietary**. A product developed using such information may be protected in law by **patents** so that others cannot copy its design.

Other companies may pay to use the design **under licence** in their own products. These payments are **royalties**.

In publishing, if a text, picture, etc. is **copyright**, it cannot be used by others without permission. Payments to the author from the publisher are **royalties**.

The area of law relating to patents and copyright is **intellectual property**.

	Noun	Verb
BrE:	a licence	to license
AmE:	a license	to license

15.1 Choose the correct forms to complete these sentences containing words from A opposite.

- 1 White came up with (a design/design) that combined lightness and warmth.
- 2 There's an exhibition on architecture and (the design/design) at the Museum of Modern Art.
- 3 McGrew is vice president of (a development/development) and product planning.
- 4 The FDA has approved (a development/development) for treating tooth disease, a new laser machine.
- 5 Electric light was (an invention/invention) which enabled people to stay up later.
- 6 Sometimes (an invention/invention) is so obvious that it is hard to believe nobody thought of it before.
- 7 Channel Four has always encouraged experimentation and (an innovation/innovation) in its films.
- 8 He discovered (an innovation/innovation) that has enabled him to build guitars more efficiently.

15.2 Complete this presentation using words from B opposite. Put the words in brackets into their correct form.

Hi, I'm Raj (1) I'm head (2) product (3 develop) at (4) Indian Rice Research Centre. I'm in charge of research (5) development (6) our (7 researching) centre in Delhi. Our (8 laboratory) are (9) of the most (10 innovation) (11) agriculture. We have recently (12) some big (13 breakthrough) in increasing rice production. I love (14 technological) , using scientific knowledge (15) improve people's lives. (16) technology (17) rice development (18) a good example (19) this. We are at the (20) edge of rice-growing techniques. Everything we do (21) state-of-the-art, using the most advanced biological (22 know) available.

15.3 Match the expressions (1–6) from C opposite with their meanings (a–f).

- | | |
|---------------------------|------------------------------------------------------------------------------------------------------------|
| 1 copyright infringement | a a payment to the owner of a design, or to an author |
| 2 intellectual property | b an arrangement between the owner of a design and someone else, allowing them to use the design for money |
| 3 patent application | c when someone uses another's text, pictures, etc. without permission |
| 4 proprietary information | d when an inventor asks the authorities to officially recognize an invention as his/her property |
| 5 royalty payment | e designs, ideas, etc. that belong to someone |
| 6 licensing agreement | f the law relating to designs, ideas, etc. that belong to someone |

Over to you



For you, which is the most important invention of the last 100 years?
Which one do you wish had not been invented?