

**1 Cooking**  
**When:** up to 2.3 million years ago  
**How it made a difference:** Learning to cook gave early humans an evolutionary advantage. Cooking breaks food down, making it easier to digest — so our bodies can absorb more energy and nutrients from it.

**2 Farming**  
**When:** 12,000 B.C.E.  
**How it made a difference:** Farming allowed people who once moved from place to place to settle more permanently. Reliable food supplies supported larger populations, and small settlements grew into villages, towns and cities.

**3 Wheel**  
**When:** before 3,500 B.C.E.  
**How it made a difference:** No one knows who invented the very first wheel. The invention of wheels made it easier to move people and heavy loads, and they became a building block for countless other inventions.

**4 Writing**  
**When:** 3,200 B.C.E.  
**How it made a difference:** Writing developed independently in different parts of the world, but the oldest known writing system comes from Sumer, in ancient Mesopotamia (in what is now Iraq). Writing allows us to store information and pass knowledge from one generation to the next. Even better, the development of writing led (eventually) to the invention of *KidsPage!*

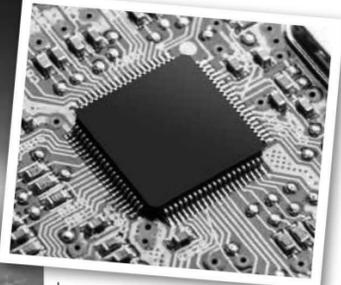
**5 Gunpowder**  
**When:** around 850 C.E.  
**How it made a difference:** Accidentally invented by chemists in China,



**Left: One of the dozens of GPS satellites currently orbiting Earth.**

inventor Nikolaus Otto, the internal combustion engine would go on to power cars and other vehicles.

**10 Airplane**  
**When:** 1903  
**How it made a difference:** On Dec. 17, Orville Wright piloted the Wright Flyer on



**Microchips led to the invention of laptops and mobile phones.**

the first powered flight. It stayed in the air for 12 seconds and traveled about 120 feet — starting a revolution in long-distance travel that continues today.

**11 Computer**  
**When:** 1937  
**How it made a difference:** Computers can handle calculations far beyond what any human could do. One of the first electronic digital computers was developed by U.S. physicist John Vincent Atanasoff.

**12 Microchip**  
**When:** 1958  
**How it made a difference:** Invented independently by two U.S. engineers, microchips allowed computers to become smaller, faster and more powerful.

**13 GPS**  
**When:** 1978  
**How it made a difference:** A network of GPS (Global Positioning System) satellites helps people pinpoint their location.

## 13 inventions that changed the world

Human beings are the most ingenious species on Earth. We just can't stop inventing things! Here we revisit some of history's biggest *Eureka!* moments and see how they shaped history.



**A tablet inscribed with ancient Sumerian writing.**

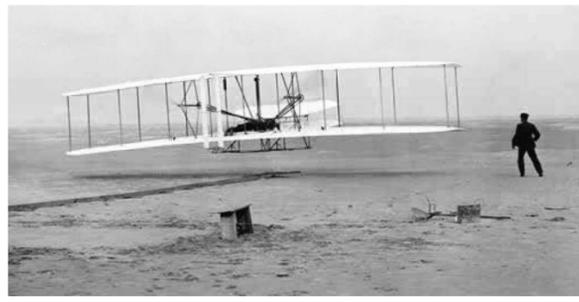
gunpowder changed the nature of warfare by providing the explosive ingredient of bombs, rockets, guns and other weapons. In a more positive development, the creation of gunpowder also led to the invention of fireworks!

**6 Telescope**  
**When:** 1608  
**How it made a difference:** Much of what we know about Earth and its place in the universe comes from looking up at the night sky.

The telescope, invented by Dutch lens maker Hans Lippershey, allowed astronomers to study the stars in far greater detail.

**7 Plastic**  
**When:** 1862  
**How it made a difference:** Strong, light and flexible, plastic is one of the most widely used human-made materials. The first plastic was developed by British chemist and inventor Alexander Parkes. He originally (modestly) named it after himself: Parkesine.

**Right: The very first telephone.**



**Brothers Orville and Wilbur Wright make the first powered, controlled airplane flight in 1903.**

**8 Telephone**  
**When:** 1876  
**How it made a difference:** Inventor Alexander Graham Bell was the first to patent

the telephone. Humans haven't stopped talking on them since.

**9 Internal combustion engine**  
**When:** 1876  
**How it made a difference:** Created by German



## PUZZLES & JOKES

Stumped? Don't worry, you can find the solutions to all the puzzles at: [whatonearthmag.com/answers](http://whatonearthmag.com/answers)

### BREAKFAST WORD SEARCH

Can you spot the 12 words related to breakfast hidden in our word search puzzle? Good luck!

S E E Z W  
X G X M A I B C B  
G G H S T N M P A N A  
I E F A R Y Q A G H C C Q  
F V I U S W R E L E Z O O  
R Z R G I E C L U Z M R O N J  
X B O Q J K Z K S P W Z M F U  
A Y N A L A J I H B H I P V I  
W F F D P C D C A B L J A K C  
L Q H Y E N O H B K E R L P E  
A I A M A J K N P Z W V T  
O E X W P O T O A S T T M  
I R Y D Z X L X K O U  
S E B G B E W T C  
C T T M F

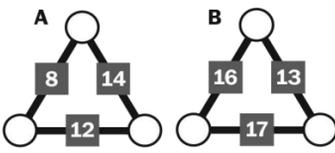
- |        |       |          |
|--------|-------|----------|
| BACON  | HONEY | PANCAKES |
| BAGEL  | JUICE | SYRUP    |
| CEREAL | MELON | TOAST    |
| EGGS   | MILK  | YOGURT   |

### NUMBER TRIANGLES

In the triangles below, the numbers inside the squares are the sums of the two numbers in the connected circles. For example:



Can you figure out which number should appear in each of the circles? All the numbers in the circles are between 1 and 10, and a number can only be used once in each triangle.



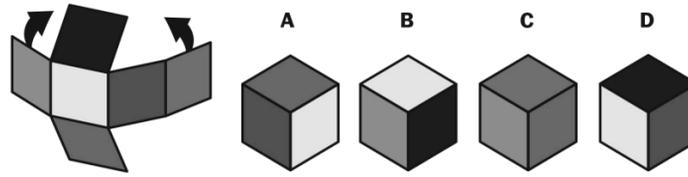
### SUDOKU

Fill all the empty squares so that every row, column and 3x2 box contains each of the numbers 1 to 6.

	2		5		1
		4	6		2
	3			6	5
2	5				3
			1	5	
1		5			6

### CUBE IT!

The six-sided shape on the left can be folded to form a cube. Only two of the cubes on the right can be made by it. Which are they?

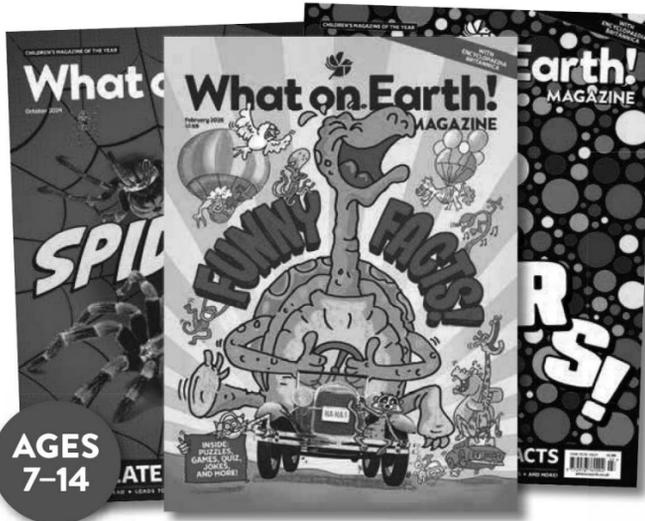


## What on Earth! Magazine

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