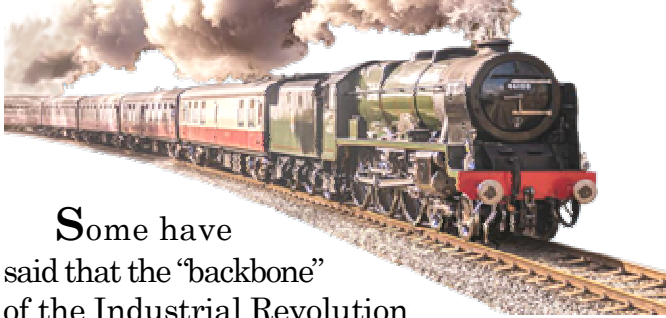


# CROSSROADS

CROSSROADS Language Studio's Newsletter March, 2024

## STEAM



Some have said that the “backbone” of the Industrial Revolution in the 18<sup>th</sup> century rested on the invention of the steam engine. In 1698 Thomas Savery patented a hand-operated steam-pump to use in removing water from coal and tin mines. This was the first practical application of steam for industrial usage. In 1712 another Englishman, Thomas Newcomen, developed a more efficient engine using steam-power to deal with the challenge of draining water from mines. In 1769, a Scot by the name of James Watt, patented a much improved version of the steam engine and in 1776 two of his steam-powered engines were installed at industrial sites, one to pump water out of a colliery and one to blow air into the furnaces at an ironworks factory. Now, the Industrial Revolution was in full swing!

But long before the Industrial Revolution of the 18<sup>th</sup> century, inventors, designers, engineers, mathematicians, or just plain old amateur hobbyists were tinkering around with steam-driven contraptions.

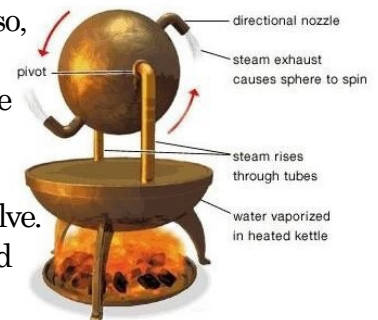
In 1606, a Spaniard, Jeronimo de Ayanz y Beaumont, developed and patented a steam-powered pump that was successfully deployed to drain inundated mines in Guadalcanal, Spain. Could his invention have been the inspiration for the British gentlemen mentioned above? And what inspired Beaumont to create *his* pump, apart from an actual need for the device?

Or could other rudimentary steam-based gadgets like Italian Giovanni Branca's 1629 cylindrical escapement device, or Taqi al-Din's simple impact steam turbine from 1551 Ottoman Egypt, have done the trick of inspiring the Industrial Revolution's inventors a century or more later? Even Leonardo da Vinci thought of a design for a steam-powered cannon in the 15<sup>th</sup> century!

Back even further and we have the English historian, William of Malmesbury, in 1125 describing a church organ in Reims, France that was powered by heating water to compress air. Indeed, the first recorded use of steam to transfer heat into movement goes all the way back to Archytas, a mathematician in ancient Greece, whose device entertained by propelling small wooden birds along wires using steam. That was way back in 400 BCE!

The earliest steam contraption that might be identified as an engine was invented by Heron of Alexandria in the 1<sup>st</sup> century CE in Roman Egypt. His design, a novelty, consisted of a sealed caldron containing water placed over a heat source. As the water boiled, steam rose and entered a suspended cylinder through two pipes on either side. The cylinder had two additional bent pipes allowing the steam to escape and, by doing so, causing it to rotate – the first steam engine is created!

Mankind, it would seem, doesn't really evolve. We mostly just copy and improve on the past.



## Net News

**NET LESSONS:** Too busy to come to CROSSROADS?

.... Try our *lessons on the net!*

For some more about Heron's invention try this site:

<https://explorable.com/herons-aeolipile>

# Some Thoughts for the Month



**Joshua Says:** “I am always doing that which I cannot do, in order that I may learn how to do it”. This is a quotation from Pablo Picasso. Picasso was one of those rare individuals that have cropped up throughout history, and who have contributed something unique to the world. But, you do not have to be a “Picasso” to understand the wisdom in the message from this quote.

**Junko Says:** What are “phytochemicals”? Plants, produce phytochemicals that help protect from viruses, bacteria, fungi and parasites. Phytochemicals have antioxidant properties that can decrease the risk of many diseases and can help neutralize free radicals, which can damage DNA. It can be found in fruit, vegetables, beans and grains. Eating colorful vegetable soup is an easy and convenient way to get all types of phytochemicals into your body.



**Marek Says:** I remember the times in Wales when it took 4 attempts to pass a driver’s license test. On My first practical test, I was gathering steam, performing various city manoeuvres, but I would soon begin to steam up trying to navigate roundabouts of Welsh countryside and ultimately fail the test. On my fourth attempt, just as I was starting to lose steam, I finally passed it and, to blow off steam, I went on holiday abroad, by car.

**Mandcy dit:** Ça y est, le printemps est arrivé !! Il fait froid, il fait chaud, on ne sait pas comment s'habiller. Aussi, cette année, les fleurs de cerisiers vont fleurir plus tôt, j'espère donc profiter agréablement du pique-nique. De plus, Le 31 mars, c'est la fête de Pâques, donc les français mangent de l'agneau et beaucoup trop de chocolat. Je dois donc faire regume en avril !!! Félicitations aussi aux deux films japonais qui ont gagné un oscar, Godzilla et le film d'animation des studios Ghibli. Maintenant, je suis très motivée pour les regarder.



## ACROSS

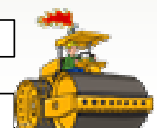
- 6 the result of creative thinking
- 8 in the earliest stages of development
- 10 a rotating engine
- 12 a very large pot
- 13 doing unpaid, idle, random work
- 15 pressed tightly together
- 17 covered with water
- 18 people pursuing pleasure activities
- 19 hang freely

## DOWN

- 1 machine or tool used for a particular purpose
- 2 set in place for use
- 3 causing to move forward
- 4 useful machines, devices
- 5 skillful, avoiding waste
- 7 striking one body against another
- 9 something original, new and surprising
- 11 mechanical device to regulate movement
- 14 useful tools
- 15 a coal mine and connected buildings
- 16 the creation of a new device or process

## Play A Game!

Find the answers on P1



[\(print version here\)](#)

*An Acronym is an abbreviation made from the first letters of a multi-word term, name or phrase. Select the correct wording for each of the following:*

**1. ASAP**

- Active Support After Purchase
- As Soon As Possible
- Adjust Speed After Passing

**2. GMT**

- Greenwich Mean Time
- General Management Team
- Give Me Time

**3. BBC**

- British Breakfast Club
- Buy Before Cancellation
- British Broadcasting Corporation

**4. TESL**

- Testing English Slows Learning
- Teaching English As a Second Language
- Try Easy Self-Learning

**5. NGO**

- Not (a) Good Offer
- Non-Government Organization
- Nothing Going On

**6. CEO**

- Chief Executive Officer
- Children's Educational Organization
- Celebrity's Evening Out

**7. LOL**

- Lap Of Luxury
- Levy On (a) Loan
- Laugh Out Loud

**8. ABC**

- American Broadcasting Company
- Anti-Bullying Campaign
- American Bicycle Club

**9. WIP**

- Walk In Peace
- Work In Progress
- With Implied Purpose

**10. SCUBA**

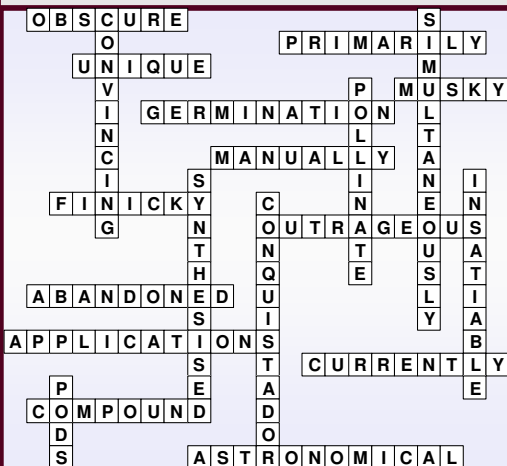
- Special Case Under Bureau Assessment
- Special Clause Under Basic Agreement
- Self-Contained Underwater Breathing Apparatus

**11. PIN**

- Personal Identification Number
- Please Insert Now
- Personal Information Number

**12. RIP**

- Real Intention Perceived
- Ran Into (a) Problem
- Rest In Peace



**ACROSS**

- 1 hard to see, unclear
- 4 being the most important
- 5 distinctive one-of-a-kind
- 7 a type of smell
- 8 grow or sprout (from seeds, etc)
- 9 by hand
- 12 over fussy about details
- 14 greatly exceeding normal limits
- 15 left behind, given up
- 16 usages
- 17 at this time, now
- 19 two or more parts mixed together
- 20 unbelievably large

**DOWN**

- 2 persuasive, believable
- 3 at the same time
- 6 to fertilize a flowering plant
- 10 created artificially
- 11 impossible to satisfy
- 13 a Spanish adventurer
- 18 they contain the seeds of plants

## Last Month's puzzle Solution



**Don't forget... Our SPECIAL 1+1 Campaign offer! Up to 50% off!!**

See our notice board, or ask Junko in our office, for the details.