Which chemist would you put on the £50 note?

From *Education in Chemistry*
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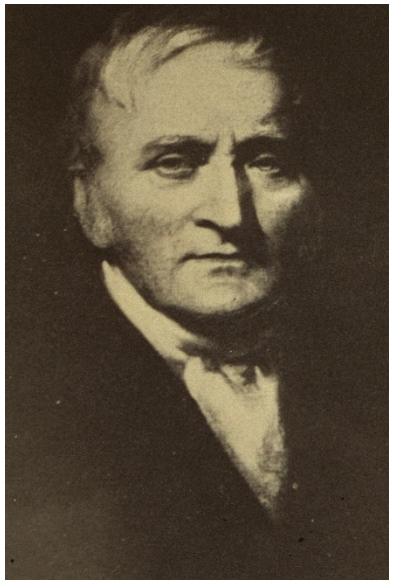
Robert Boyle

- 1669–1725
- Established the science of chemistry. Before chemical reactions were mystical occurrences, the domain of alchemy.
- Pioneered scientific methods and applied it to his chemical investigations
- In 1661 produced his book *The Sceptical Chymist*, defining the principles of observation and measurement that we use to this day

Henry Cavendish

- 1731–1810
- Correctly guessed that hydrogen was proportioned to two in one water. Credited for recognising its elemental nature
- By dissolving alkalis in acids he made ‘fixed air’ (carbon dioxide) which he collected and measured solubility in water and their specific gravity and noted their flammability
- Concluded that “common air consists of one part of dephlogisticated air [oxygen], mixed with four of phlogisticated [nitrogen]
- The Cavendish Experiment. To measure the density of the Earth, he calculated the attraction between balls from the period of oscillation of a torsion balance, used this value to calculate the density of the Earth
- One of so-called pneumatic chemists

John Dalton



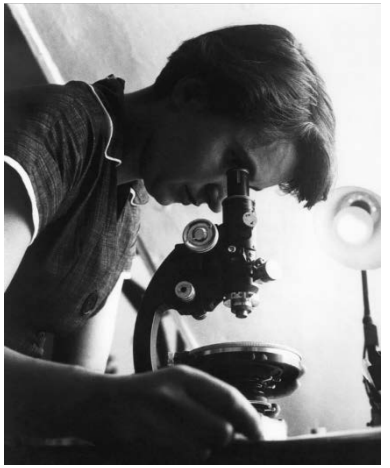
- 1766–1844
- Known as a chemist, physicist and meteorologist
- Introduced atomic theory to chemistry
- Researched colour blindness
- Influenced by Quaker and meteorologist Eliu Robinson, he kept a meteorological diary for 57 years. Rediscovered George Hadley’s theory of atmospheric circulation
- Before Ordnance Survey began measuring mountains, he did
- Provided a method of calculating relative atomic weights for the chemical elements. His table of relative atomic weights contained six elements - hydrogen, oxygen, nitrogen, carbon, sulfur and phosphorus, with the atom of hydrogen assumed to weigh 1

Humphry Davy

- 1778–1829
- Credited with inventing the field of electrochemistry
- Isolated a series of elements: potassium and sodium in 1807; calcium, strontium, barium, magnesium and boron in 1808
- Discovered the elemental nature of chlorine and iodine
- Experimented with nitrous oxide in 1799, noting its potential anaesthetic properties and nicknaming it laughing gas
- Assisted Michael Faraday, who called him his ‘greatest discovery’
- Since 1877, Royal Society of London has awarded Davy medal for “an outstanding important recent discovery in any branch of chemistry

Rosalind Franklin

- 1920–1958
- Led pioneering work on the molecular structure of viruses; her team member Aaron Klug continued her research, winning Nobel prize for chemistry in 1982
- Finished her degree, getting a 2nd, but Cambridge didn't award degrees to women until 1947 - so she got hers retroactively
- Worked for British Coal Utilisation Research Council in 1942 and continued her study of coal in Paris using X-ray crystallography under Jacques Mering
- In the 1950s at the Medical Research Council, she was the only experienced experimental diffraction researcher. Applied her expertise in X-ray diffraction techniques to structure of DNA



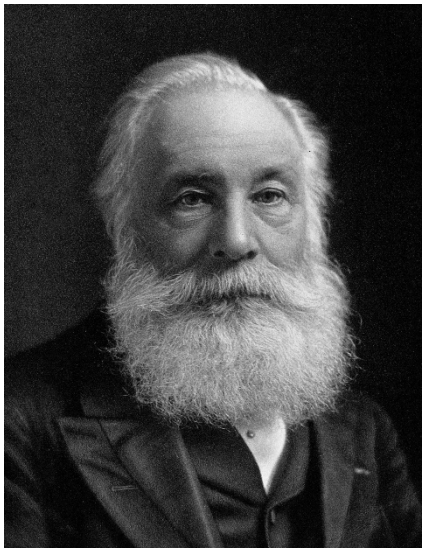
Elizabeth Fulhame

- 1750?–1820?
- Invented the concept of catalysis and discovered photoreduction
- Published An essay on combustion with a view to a new art of dying and painting in 1794, which recorded her experiments meticulously

Dorothy Hodgkin

- 1910–1994
- Developed protein crystallography
- Work on advanced x-ray crystallography, led to confirmation of the structure of penicillin and of B12. In 1969 after 35 years of work, deciphered structure of insulin
- Received a first class degree from the University of Oxford – only the third woman to achieve this
- Researched her PhD at the University of Cambridge
- One of first to see model of double helix structure of DNA

William Henry Perkin



- 1838–1907
- Unsuccessfully attempted to synthesise quinine from coal tar, when cleaning the flask he noticed an unusual purple colour. Rather than throwing it away, he examined it and identified the world’s first synthetic dye
- Set up a factory to produce the dye industrially
- Discovered and marketed other synthetic dyes
- Discovered ways to make coumain, one of the first synthetic raw materials of perfume
- The Perkin reaction – producing cinnamic acid

Marjory Stephenson

- 1885–1948
- Studied natural sciences, but the University of Cambridge didn't award women degrees and didn't allow them into its libraries and laboratories, but her college had its own
- In 1911, went to University College London to study digestive enzymes under Robert Plimmer
- After the First World War, joined the research group of Frederick Gowland Hopkins in Cambridge, working on fat-soluble vitamins. Among the first to discover adaptive enzymes. Her work on hydrogenase enzymes still routinely consulted
- Signed all manuscripts and letters MS so as not to disclose her sex because of discrimination. Was not appointed to a teaching position, subsisting on grants
- In 1947, finally appointed as a reader in chemical microbiology at the University of Cambridge

Martha Annie Whiteley

- 1880–1949
- Founded Imperial College Women's Association to help women of the college strive for equal treatment in chemistry. In 1904 advocated with 19 other women for women's admittance into the Fellowship of the Chemical Society, unsuccessfully, but in 1908 fellows voted in favour of admitting women. Full admittance was not until 1920 after the Sex Disqualification (Removal) Act of 1919. First female elected member of the Society's Council
- During the First World War, tested mustard gas on herself after its use by the Germans
- Worked on the Dictionary of applied chemistry
- Science teacher at Wimbledon High School and lecturer at training college
- Researched organic chemistry of barbiturate compounds at Royal College of Science