

Rosalind Franklin and Francis Crick

DNA means everything to you. Literally. DNA (Deoxyribonucleic acid) is a molecule inside your body that tells your body how to be, well, you. It contains information about your eye colour, the colour of your hair and even your height. Think of it as a recipe for how to build another you.

Scientists have known about DNA since 1869, but they didn't discover the role it played in genetics until 1943. Then, they discovered that it had a huge role to play in inheritance. This is how physical aspects are passed from a mother and father to their children. Even then, it wasn't known what DNA looked like or how it worked. This important piece of the puzzle fell to three very important people.

In the 1950s, many scientists were trying to work the structure of DNA. Two of these were British scientists named Francis Crick and Rosalind Franklin. Francis Crick was working with a partner called James Watson. Rosalind Franklin was working with another scientist, Maurice Wilkins.

In 1953, a chemist in California thought he had cracked the mystery. When he was proved wrong, Crick and Watson were determined to beat him to it. A few weeks later, on 6th February 1953, they published their own version that changed the world. Suddenly, the world could use DNA to solve a variety of problems.

But, a scandal erupted. It soon became clear that Crick and Watson may have had some help in their discovery. Just before they announced their amazing find, Maurice Wilkins had shown them a set of x-rays that Rosalind Franklin had produced. These provided key information in their discovery, but Franklin was never credited. When she died in 1958, she still had no idea how important her images were to the advancement of science.

What is important is that, between them, the three scientists gave the world a clear picture of DNA and how it works. Their hard work and the discoveries of scientists before them have made it possible for scientists to detect and treat diseases in babies before they are even born; to identify

the age and origins of ancient human beings and for police forces to determine if somebody is innocent or guilty of a crime.

Francis Crook and Rosalind Franklin may have had their differences, but they were both pioneering innovators and British scientists who changed the world.

VOCABULARY FOCUS

1. Find a definition for "inheritance" in the text.
2. Which word tells you that working out what DNA looked like was difficult?
3. Which word or phrase has a definition that most closely matches "to solve or find a solution to a problem"?
4. Write a defintion for "variety"
5. Which word or phrase tells you that Rosalind Franklin's x-rays were important?

VIPERS QUESTIONS

E Why has the author put Deoxyribonucleic acid in brackets?

S List one of the things that DNA controls, according to this text.

I Why does DNA mean "Literally" everything to you?

R When did scientists first discover DNA?

S Make a list of three things that DNA allows us to do now.



Worst Jobs For Kids

Ever moaned about having to do your homework? What about cleaning your bedroom, or hoovering the floor? Count yourself lucky you weren't a child during Queen Victoria's reign. You were lucky if you were sent to school back then; most children were sent out to work in some of the most horrific conditions you can imagine. You've probably heard about chimney sweeps and flower sellers, but there were much worse jobs out there if you were desperate.

Do you love rolling around in the mud? How about scraping through the dirt to find any coins or lost bits of jewellery? If that sounds good, then a job as a tosher might have been right up your street. It wasn't just the muck and filth on the street though, you'd spend most of your time down in the sewers rummaging around for anything that the rich folk up above might have dropped into the drains.

Tiny children have tiny hands, and they were perfect for fixing the fiddly little mechanisms on the enormous looms that factories used to weave fabric. The sound of the shuttles flying backwards and forwards would have caused quite a din; however, they couldn't stop working just to fix a machine. Instead, children would scuttle around underneath the vast wooden machines and try to time their movements perfectly. Quite often they would get it wrong. The lucky ones only lost a finger. The unlucky ones? Well, I'm sure you can guess.

It wasn't just fixing the looms that children's dainty digits were perfect for. The rise of the steam train meant that lots of children were needed to scrape out the cinders and clean the undercarriage of the engine. Not only did this involve a lot of choking dust and ash, but the cinders were often still red-hot, and many children suffered horrific burns.

Most houses were lit by candles back then, and so matches were needed by the thousands. Dipping the sticks in the toxic phosphorus was another job saved for the cursed children. The horrible chemical would rot their teeth and often led to fatal lung disease. Not sure it was worth it



Dick Whittington said that the streets of London were paved with gold. More accurately, they were often paved with filth, particularly dog droppings. Luckily for the children of the time, they could earn money by scraping it up and selling it to the tanners - people who turned the hide of a cow into leather. If they really wanted to earn some money, they could help the tanners by stamping the poo into an odorous mix of chemicals (barefoot, of course) and using it to soak the skins. Unfortunately, many poor children didn't have access to a bath afterwards!

So there you have it. There were some pretty vile jobs for luckless lads and lasses in Victorian times, and we haven't even mentioned leech collectors, coal miners, rat catchers, navvies (canal diggers) and grave robbers. No wonder so many children were desperate to go to school!

SUMMARY FOCUS

1. What were most children lucky to do?
2. Which features of children made them perfect for many jobs?
3. What did all of the jobs have in common in terms of children's health?
4. What happened that meant more children were needed in railway stations?
5. Put the jobs in the text in order from worst to best. Give a reason for each one.

VIPERS QUESTIONS

V What word tells the reader how loud a noise was?

I What did Dick Whittington mean when he said, "The streets are paved with gold"?

I How do you think the author felt about Victorian children? What tells you this?

R What ingredient did tanners need?

P If you still had to do these jobs, do you think you would moan about school? Give reasons.