HIDDEN FIGURES

Margot Lee Shetterly

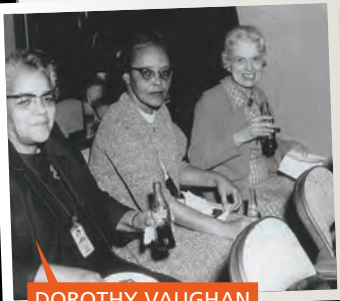
WITH ONLINE RESOURCES

SCHOLASTIC

Contents

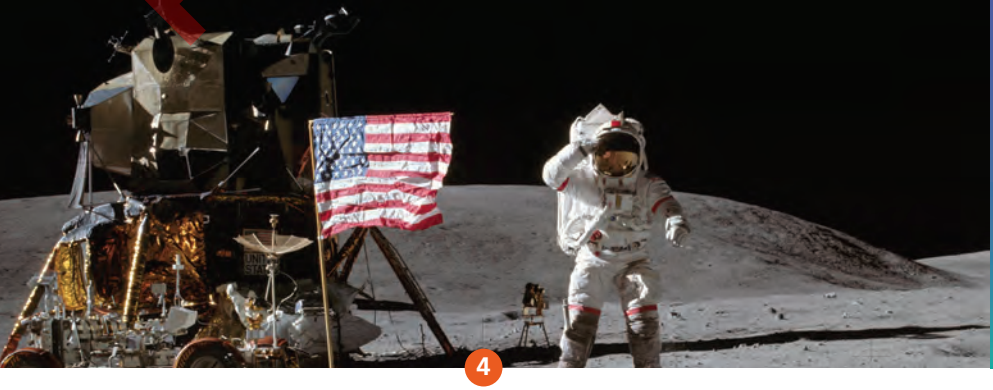
HIDDEN FIGURES

Dorothy Vaughan got a maths degree in 1929 and became a high school maths teacher in Farmville, Virginia.



DOROTHY VAUGHAN

Mary Jackson grew up in Hampton, Virginia, and studied maths and physics at Hampton University in the early 1940s.



Katherine Johnson was born in 1918, and her skill with figures was clear when she was a child. By the time she was eighteen, she had completed a degree in maths.

PLACES

US research into flight and spacecraft design began at the NACA in Virginia on the east coast in 1915.

LANGLEY RESEARCH CENTRE
Home of the NACA (later NASA)

THE HAMPTON ROADS AREA

The first US spacecraft were launched from Cape Canaveral in Florida.

HIDDEN FIGURES

CHAPTER 1

A door opens

It was nearly 40°C and extremely uncomfortable. Dorothy Vaughan was sorting socks in a room full of washing machines at Camp Pickett, Virginia. The socks belonged to American soldiers who were training at Camp Pickett before going to war.

All the women around her were black. Most of them had worked in the cigarette factories before the war. Not Dorothy. She was a maths teacher and had been to college. This was her second job, bringing in extra dollars in the school holidays. Washerwomen were the lowest paid of all war workers, but Dorothy still earned more sorting socks than teaching. She needed the money for her family of four young children. Dorothy didn't think she was too good to wash socks. She saw no difference between herself and the other workers. She wanted to send her children to college and each cent she earned would help to pay for it.

As well as being brilliant at maths, Dorothy had been a perfect student. At the age of only fifteen, she had won a place to study maths at Wilberforce University in Ohio. She was then offered a place at Howard University in Washington DC, the top university for black students. It was bad timing for Dorothy, however, as it was 1929, the year of the Wall Street Crash. The Great Depression followed, and jobs were lost everywhere as factories and shops closed. Dorothy's parents needed help to pay the family's bills and to send Dorothy's sister to college.

Instead of studying for a higher maths degree at Howard, Dorothy trained to be a teacher.

A teaching job came up at a school in Farmville, Virginia, and Dorothy moved there. She soon met Howard Vaughan, tall and handsome, and they married that same year. Working as a doorman in expensive hotels, Howard travelled from city to city with the tourist seasons. Dorothy stayed in Farmville, where Howard's parents owned a large house with plenty of space for the young family. Dorothy never had a free moment, and she never turned down a chance to put money in the bank. Even on Sundays, she earned money by playing the piano at a local church.

Over 150 kilometres from Farmville, in the Hampton Roads area of Virginia, was a place called Langley.

Langley Research Centre wind tunnel, 1934

Langley was the home of the NACA*, where US aircraft were designed. On the beautiful Chesapeake Bay were buildings full of planes and huge wind tunnels for testing them. The United States had joined World War ll in 1941 and all the buildings were painted dark green to hide them from enemy spy planes.

American President Franklin D. Roosevelt realised that air power would be the key to winning World War II. Unlike in World War I, planes were now able to carry soldiers, guns and, most importantly, bombs. In 1938, the US was making a thousand planes a year. In 1941, President Roosevelt ordered the country to make 50,000 planes a year. In fact, by 1943, the US was producing 75,000 planes a year, far more than the enemy countries of Germany and Japan.

Designing and testing planes needed millions of calculations. Physics kept planes in the air, and physics meant maths. Langley needed mathematicians. New employees could be men or women, black or white, but they had to be excellent at maths.

Although it was nearly one hundred years since the end of slavery, black Americans were a long way from equality with white Americans. In Southern states like Virginia, whites and blacks were segregated in all areas of life. White people didn't share schools, restaurants, toilets, buses or even drinking water with black people. Workplaces were segregated too. But with the war on, black workers were in a strong position. 'Give us well-paid war jobs too,' they said to the government. President Roosevelt knew they were right. In 1941, he signed a new law. From then on, all jobs were open to everyone.

* National Advisory Committee for Aeronautics

Oklahoma City, 1939

Langley wanted to employ black women as computers*. But Langley was in the state of Virginia where, even after 1941, black and white people were not allowed to live or work together. Langley's answer was an office away from the other buildings. It was called the West Area, and in 1943, the first female black mathematicians arrived. A new sign went up over the door to the West Area toilet. It said 'Coloured Girls'**.

On her way home from washing socks in Camp Pickett, Dorothy always checked the job notices in the post office. One spring day in 1943, a notice caught her eye. The NACA needed mathematicians. Dorothy had read stories in the black newspapers about good jobs for women and good jobs for black women. A job as a mathematician! Dorothy picked up a form and took it home.

* Before there were electronic computers, maths was done by human 'computers'. The mathematicians in this story are called 'computers'.
** The word 'Coloured' is not used today, but was widely used at the time when this story takes place.