

TEACHING CHARACTER

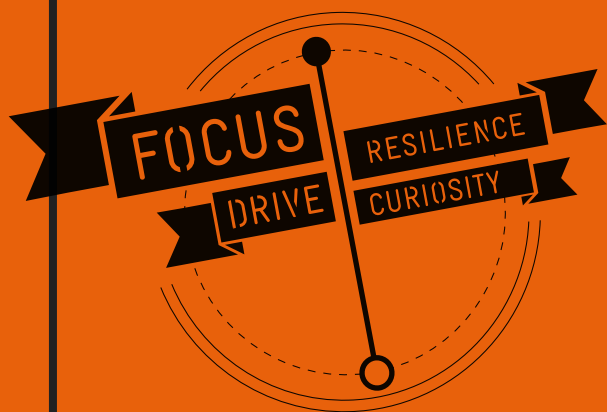
THROUGH THE PRIMARY CURRICULUM

A CROSS-CURRICULA APPROACH
TO TEACHING CHARACTER

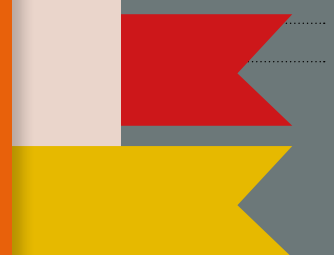
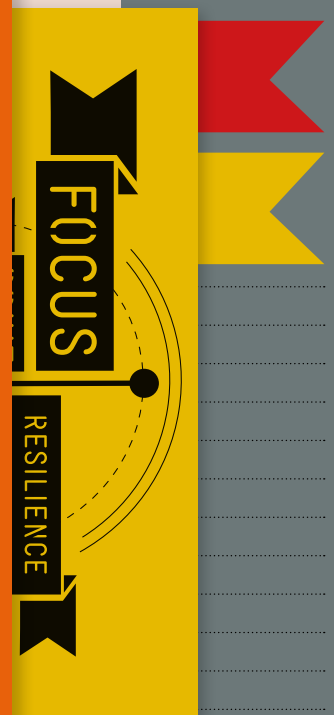
NUMBERS IN FOCUS

MAIN NARRATIVE

VIRTUE: FOCUS – SUBJECT: MATHS



THE
JUBILEE CENTRE
FOR CHARACTER & VIRTUES



EMMY NOETHER

Emmy Noether was a very famous mathematician. Though she spent most of her life in **obscurity**, fighting against **oppression**, her achievements are far reaching; she changed the way mathematicians think about maths. Other famous mathematicians, such as Albert Einstein, have described her as the most important woman in the history of mathematics.

Amalie Emmy Noether (known as Emmy) was born in 1882 in Germany. As a child, she was taught to cook, clean and play the piano; no different to many other young women of the time. Her father was a **professor** of maths and two of her brothers were going to university to study science. Emmy wanted to go to university too, but universities in Germany did not allow women to attend. Emmy was determined to not let this obstacle stand in her way.

The University of Erlangen allowed her to sit in the classes but she would not receive any credits for attending. She was just there to watch. After two years, she decided to take the exams, and she passed. Arguments went on at the university about whether Emmy should be allowed to attend. It was clear that she had a talent for maths, but people could not see past the fact she was female. Emmy continued to focus on her work. After five more years of studying, she was awarded a degree in mathematics, becoming only the second woman to do so.

Emmy wanted to continue her studies and wanted to learn more about mathematics. No university would employ her because she was a woman. Eventually, she went to work for her father, working for the next seven years without pay. She did **research** for him and taught some of his classes when he was ill, but still arguments raged on. Many other professors thought a university was not a place for a woman, regardless of how intelligent she was. Emmy spent these seven years trying to ignore these people. She refused to get involved. She wanted to concentrate on maths and maths only.

By the end of World War I things had changed in Germany. Women had been given the right to vote and were beginning to get jobs they couldn't have had before. Emmy got a job working at a university, on very little pay, and went on to work with some of the greatest mathematicians in Germany. When Einstein released his '**Theory of Relativity**', it transformed Emmy's thinking. She immediately began to make many breakthroughs in her studies and her findings were **astounding** everyone she worked with. The professors she worked closely with knew how important the work she was doing was and fought for her to be treated equally at the university. Emmy continued to **refrain** from being involved in the debate and concentrated solely on her maths and the teaching she was now doing. Even the protests from her fellow professors could not change the opinions of the people running the university.



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'CONCENTRATE
ALL YOUR
THOUGHTS UPON
THE WORK AT
HAND. THE SUN'S
RAYS DO NOT BURN
UNTIL BROUGHT
INTO FOCUS.'

- ALEXANDER GRAHAM BELL

Emmy had produced some of the greatest breakthroughs in the study of maths ever known and had helped form her own **theory** (Noether's Theorem), but things began to get much harder for Emmy. In 1933, the Nazi Party came to power in Germany. Hitler was preparing Germany for a second world war. Emmy, who was both female and Jewish, had made it public that she was against another war. The Nazi Party did not like this. Under the new government, women and Jews were not allowed to teach at universities, nor hold influential jobs. Initially Emmy tried to ignore this and she continued to focus on her maths and teaching, but eventually she was sacked from her job. Other professors tried to find her another university to work at, outside of Germany. Somewhere her talent would be appreciated. She was offered jobs in Russia, but she decided to work in America, after Albert Einstein had helped find her a job.

Emmy left her native Germany and began teaching in the USA. She began teaching at an all-female college where she was focused on **ensuring** that students were given the opportunities she had not. Her style of teaching was often described as uplifting and, even through all the obstacles she had faced, she never lost her sense of humour. Despite all the distractions in her life, she was able to inspire her students to make a difference in the world.

'NOETHER WAS THE MOST SIGNIFICANT CREATIVE MATHEMATICAL GENIUS THUS FAR PRODUCED SINCE THE HIGHER EDUCATION OF WOMEN BEGAN.'

- ALBERT EINSTEIN

Emmy died suddenly in 1935. She had dedicated her life to the **advancement** of mathematics. She had never married and she did not care for possessions or money. After her death, Einstein called her the most "significant" and "creative" female mathematician of all time. Even today, many people do not know her name or cannot recall what she did, but Emmy Noether's constant focus helped her overcome many obstacles. She became one of the most important mathematicians the world has known and her influence is still felt today.

GLOSSARY

- ADVANCEMENT**
to develop and improve something
- ASTOUNDING**
surprisingly impressive
- ENSURING**
to make certain of something
- OBSCURITY**
being unknown
- OPPRESSION**
prolonged cruel or unjust treatment
- PROFESSOR**
A high level university teacher
- RESEARCH**
to investigate something
- REFRAIN**
to stop oneself from doing something
- THEORY**
a set of ideas that something is based on
- THEORY OF RELATIVITY**
a famous theory about space and time by Albert Einstein