

TEACHING CHARACTER

THROUGH THE PRIMARY CURRICULUM

A CROSS-CURRICULA APPROACH
TO TEACHING CHARACTER

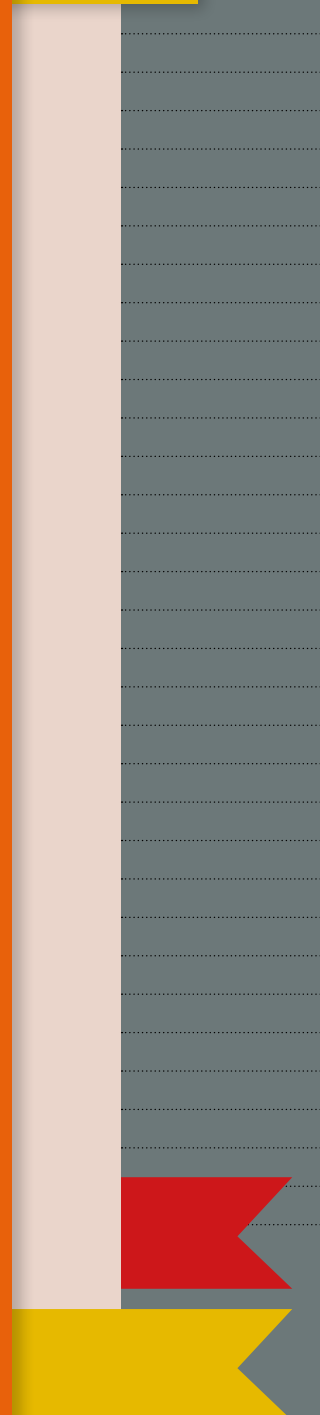
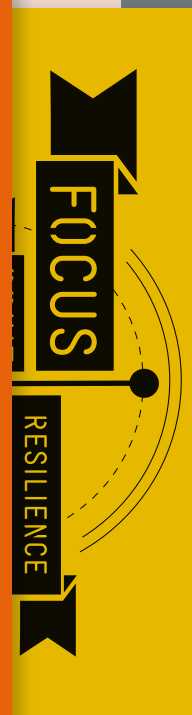
NUMBERS IN FOCUS

TEACHER'S NOTES

VIRTUE: FOCUS - SUBJECT: MATHS



THE
JUBILEE CENTRE
FOR CHARACTER & VIRTUES



TEACHING CHARACTER

NUMBERS IN FOCUS – EMMY NOETHER



TEACHER'S NOTES

The purpose of this pack is to reaffirm and develop pupils' knowledge and understanding of character virtues, with particular reference to the primary virtue of **focus** and the secondary virtues of resilience, drive and curiosity. These virtues should be highlighted as important to a successful transition from Year 6 (Key Stage 2 Primary) to Year 7 (Key Stage 3 Secondary). To accompany these Teacher's Notes, Numbers In Focus – Pupil Activity, Numbers In Focus Narrative and a PowerPoint are downloadable via the Jubilee Centre for Character and Virtues website.

THE FOLLOWING SUPPORTING DOCUMENTS ARE ALSO PROVIDED ONLINE:

- Teaching Character Through the Primary Curriculum Introduction Materials
- Pre-lesson Virtue Toolkit including activities on the following virtues: Resilience, Courage, Focus, Curiosity, Integrity, Drive, Charity and Service.
- Focus PowerPoint
- Other narratives in the programme including: John Simpson, Alan Turing, Gertrude Elion, Luz Long, Wangari Maathai, Winston Churchill and a Local Hero.

BACKGROUND INFORMATION FOR TEACHERS:

This information is to supplement the Focus PowerPoint, which provides an investigatory approach to focus in mathematics. The 'Numbers in Focus' Narrative is available online and can be printed off for pupil use. The 'Numbers in Focus' Narrative in this pack gives an abridged account of Emmy Noether's life and her focus in achieving new mathematical theories. The main emphasis of the narrative is to provide sufficient evidence of Noether's focus in her pursuit of mathematical breakthroughs for classroom discussion. The extract provides opportunities to discuss Noether's virtues and disposition. The aim is for this lesson to open a discussion about focus and the secondary virtues in focus (resilience, drive, curiosity). Children should be given the opportunity to reflect on their learning and how these virtues are present in their own life.

Teachers may well wish to expand and develop work here, using direct links to the Maths curriculum and cross-curricula links to English. These resources and lesson plans provide a guide and teachers are encouraged to adapt them to best suit the needs of their classroom.

OTHER RESOURCES

- <http://www.britannica.com/biography/Emmy-Noether> – Encyclopaedia Britannica
- http://www.nytimes.com/2012/03/27/science/emmy-noether-the-most-significant-mathematician-youve-never-heard-of.html?_r=0 – New York Times article
- <http://www.thefamouspeople.com/profiles/emmy-noether-507.php> – Biography
- <https://www.washingtonpost.com/news/comic-riffs/wp/2015/03/23/emmy-noether-google-doodle-why-einstein-called-her-a-creative-mathematical-genius/> – Washington Post article

LESSON PLAN

NUMBERS IN FOCUS

This lesson plan, with accompanying PowerPoint, is a guide for teachers in how to best use the pupil resources provided. This plan should provide inspiration and is a suggested way to conduct a lesson to meet the objectives stated. Teachers are encouraged to adapt and develop this plan to best suit their class. The corresponding Virtue Toolkit lesson should be taught pre-lesson and the Virtue Glossary could be provided throughout the lesson to aid pupils' understanding. Teachers should use a selection of different methods and processes to facilitate discussion and reflection on the primary and secondary virtues in focus. It is important pupils become aware of the virtues and their meaning, but discussion and reflection will also aid pupils' understanding of them. Teachers may need to differentiate this lesson to best suit their pupils' needs; paired, shared, group or guided work is encouraged where needed.

TITLE: NUMBERS IN FOCUS – EMMY NOETHER
PRIMARY VIRTUE: FOCUS

POSSIBLE CROSS-CURRICULA LINKS:
ENGLISH – BIOGRAPHIES AND AUTOBIOGRAPHIES

CURRICULUM LINK: MATHS – ALGEBRA

LEARNING OBJECTIVES

1. To understand what the virtue of focus means in the life of Emmy Noether.
2. To accurately identify vocabulary that illustrates the virtue of focus in the 'Numbers in Focus' Narrative.
3. To begin to be able to retrieve information from the narrative that illustrates a wider selection of virtues.

LEARNING OUTCOMES

1. To be able to identify and describe the virtue of focus and begin to relate it to their own lives.
2. To begin to discuss how different virtues occur together in positive or negative ways.
3. To begin to be able to relate the virtue of focus to the period of transition from Year 6 to Year 7.

RESOURCES

Provided: Numbers in Focus Narrative, Numbers in Focus Teacher's Notes, Numbers in Focus Pupil Activity, Focus PowerPoint, I Will cards.
Not Provided: Interactive White Board, Flipchart, Pens, Paper

INTRODUCTION

5 MINUTES

Introduce/affirm the meaning of character and virtue. Introduce the definition of Focus (see Focus PowerPoint). Go over children's examples of this virtue in their own lives.

TEACHER LED ACTIVITY

20 MINUTES

Introduce PowerPoint and ask, can you think of a time you have shown focus? Did showing focus help you achieve your goals? Encourage discussion among children and then reflect on answers as a whole class. Move on to next slide. Show children the pictures (print pictures off if needed). Ask the children, how are these people showing focus? What might be distracting them and why? Who do you think it's most important for to stay focused? Discuss answers in pairs or small groups and then bring together for class reflection. Discuss whether having too much focus can have negative consequences, e.g. you may neglect your friends or family, you may become obsessed. Discuss what other virtues you may need to remain focused. Show last slide and give brief introduction to Emmy Noether and her links to the maths curriculum.

CHILD LED ACTIVITY

25 MINUTES

Allow pupils time to read/or read to the pupils the 'Numbers in Focus' Narrative, instructing them to look closely for when the primary virtue is displayed (provide highlighters if appropriate). Children must also reflect on secondary virtues present in the narrative (resilience, drive, curiosity) and how these may have aided Noether in solving mathematical problems. Discuss whether these virtues are always positive. Were there any negative consequences from displaying such virtues? Ask children to then answer questions from the activity sheet. Model if necessary.

PLENARY

10 MINUTES

Bring the group together to discuss the examples of focus found within the narrative and how these may have developed or clashed with other virtues. Invite them to share their examples. Explain how and where this virtue will be relevant for when the children transition to Year 7. Provide 'I will' cards and get the children to write a statement of intent – one thing they will now do in regards to this virtue. Make sure they are achievable.