

## Autumn 1: Rise of the Robots: Could they take over the world?

Children will learn about the evolution of robots, investigate how they are used and design and make their own.

### Possible Activities

Children will further develop their understanding of place value using a variety of visual representations. There will be frequent opportunities for counting to develop fluency in number, including negative and decimal numbers. They will continue to develop mental methods for adding and subtracting as well as formal written methods. Problem solving and reasoning will underpin all that we do so children have an opportunity to apply their new knowledge in different contexts. Children will also complete regular maths investigations to develop problem solving and reasoning skills.

### Mathematical Development (Place Value; Addition and Subtraction)

#### Year 5

- Read, write, order and compare numbers to at least 1000000 and determine the value of each digit.
- Interpret negative numbers in context.
- Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000.
- Add and subtract whole numbers with more than 4 digits, including using formal written methods. Use rounding to check answers.

#### Year 6

- Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
- Interpret and use negative numbers in context.
- Round numbers to a required degree of accuracy.
- Add and subtract whole numbers and decimals including using formal written methods. Estimate to check.

### Communication, Language and Literacy (Speaking & Listening, reading, writing, MFL)

#### English

- Read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books and textbooks.
- Check the text makes sense to them, discussing their understanding and explaining the meaning of words.
- Identify the audience for and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own.
- Propose changes to grammar, vocabulary and punctuation.

#### Italian

- Listen attentively to spoken language and show understanding by joining in and responding.
- Engage in conversations; ask and answer questions; express opinions and respond to those of others.

### Possible Activities

#### English

Film literacy - Using the short film 'Origins' as a stimulus, children will write their own story about a robot.  
Non- Fiction - *Wallace and Gromit: Cracking Contraptions*. Devise and write about a cracking contraption to create a class Haynes Manual.  
Book Study - They will also undertake an in-depth study of *The Iron Man* by Ted Hughes.

Children will take part in a weekly guided reading session with class teacher where they will read and discuss a variety of different texts. Spellings and handwriting will be taught outside of the English lesson. Grammar objectives will be embedded into the English units.

#### Italian

Children learn/ recap how to talk and write about themselves.

### Possible Activities

#### ICT

Children explore programming using Scratch.

#### Science

Children will investigate forces through practical activities and challenges. Through practical investigations they will discover how levers, pulleys and gears work.

#### History

To provide a context for our learning, children will look at the development of robots over time.

### Knowledge and Understanding of the World (Geography, History, Science, ICT)

#### ICT

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.

#### Science – Forces

- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
- Set up practical enquiries and fair tests.

#### History

- To develop a chronology.
- Note connections, contrasts and trends over time.
- Create and answer questions about change and cause.
- Construct informed responses that involve the selection and organisation of relevant historical information.

**Enrichment**  
**RAF STEM Workshop**  
**Music week with Mr Kille**  
**In-school Robot Wars!**

I wonder...  
Are there some jobs a robot could never do?

### Physical Development (PE, growth and health)

#### Swimming - children will work towards:

- To swim competently, confidently and proficiently over a distance of at least 25 metres.
- Use a range of strokes effectively.

#### Dance

- Perform dances using a range of movement patterns.

### Possible Activities

#### Swimming

Children will start a ten-week programme of weekly swimming lessons at the pool in Monteruscello.

#### Robotic dance

Children learn robotic dance moves and then move on to creating their own group performances to electronic music.

### Possible Activities

#### R.E. – Why do some people believe God exists?

Children will look in depth from different religious and non-religious groups about beliefs in God. Pupils will consider why people do or don't believe in God and the impact that might have on the way they live their everyday life.

#### PSHE & Citizenship

Children will explore feelings associated with starting something new. They will take part in creating a new key stage community and feel valued as an individual within it.

#### Philosophy

Children will question, think deeply and take part in class discussions around emotive issues.

### Personal, Social and Emotional Development. (RE, PSHE, Citizenship, SEAL)

#### RE

- Express thoughtful ideas about the impact of believing or not believing in God on someone's life.
- Present different views on why people believe in God or not, including their own ideas.

#### PSHE & Citizenship

- I know how it feels to do or start something new, and some ways to cope with these feelings.
- I understand my rights and responsibilities in the school.

#### Philosophy for Children

- To discuss what they are learning to develop their wider skills in spoken language in different situations.

### Creative Development (Art, D&T, Music, Dance, Drama, Role Play)

#### Art

- To create sketchbooks to record their observations and use them to review and revisit ideas.
- Children are taught about great artists, architects and designers in history.

#### D&T

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.
- Select from a wide range of tools and materials to perform practical tasks and construct.
- Understand and use mechanical systems in their products.

#### Music

- Improvise and compose music for a range of purposes.
- Listen with attention to detail and recall sounds with increasing aural memory.

### Possible Activities

#### Art

Children will study the abstract portraits of Pablo Picasso and create a self portrait with frame. They will also look at the inventions of Leonardo da Vinci, particularly his *mechanical knight*.

#### D&T

Children will design and make a robot and/or hydraulic arm using pneumatics.

#### Music

Children explore beat, rhythm and pitch in three compositions entitled *cyborg chase*, *cyborg attack* and *cyborg hide and seek*.  
Music week with Mr Kille focusing on a particular instrument for a group performance.