



WE ARE ENGINEERS: Embracing Technology to Solve Problems

Focus Overview

YEAR 2: Vehicles



At Our Lady
and
St. Hubert's,
home, school
and parish
work
together,
knowing that
God is with
us in all we
do

A Wonderful World:
Appreciating God's
Creations



Peace and Conflict: Respect
for all Individuals



A Moment in Time:
Learning from the
Past for Our Future



We are Engineers:
Embracing Technology
to Solve problems



Nurturing Nature:
Engaging and Taking
Responsibility



**Our Place in the
World:** Identity and
Community



We are Engineers: Embracing Technology to Solve Problems Year 2 – Vehicles



Technology will be the driving force behind our 'We are Engineers' theme. Children will learn about how we can use technology to help us solve problems. As part of this unit, children will learn about Materials in **Science**. They will investigate the properties and suitability of materials, and understand why they are best suited for different purposes. This will link in to their learning in **DT**, where we will be making a moving vehicle using axels and wheels and attaching them to a chassis. We will look at how vehicles have changed over time in **History**, and link this to the impact that technology has had on our lives, and will continue to have in the future. In **Computing**, children will develop their knowledge of Coding by using Scratch to create a conversation between their sprites.

Theme Impact

Children will have a deeper understanding of the importance of technology in our lives and how this has helped to change and shape our world today. They will begin to understand the enormity of the range of technology available, and start learning how they can use this to learn more about their surroundings.

Catholic Social Teaching

Option for the poor and vulnerable: This means that God invites us to care in a special way for those who need the most help.

Through Collective Worship, children will explore the many various conditions and environments that people live in- both locally and globally and the reasons for this. They will think about how they can support people who are victims of things like famine and unemployment. This will be taught alongside the virtues of **Compassionate and Loving**; compassionate towards others, near and far, especially the less fortunate; and loving by their just actions and forgiving words.

Curriculum Drivers

DT

Nation Curriculum Objectives

- Design purposeful, functional, appealing products for themselves and other users based on design criteria.
- Generate develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
- Select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping, joining and finishing.
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.
- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.
- Build structures, exploring how they can be made stronger, stiffer and more stable.
- Explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.

Knowledge and Skills Progression

- **R2**- Children use what they have learnt about media and materials thinking about uses/purposes and properties.
- **R3**- Children represent their own ideas, thoughts and feelings through discussion and drawings.
- **D1**- Talk about what they want to make, in relation to the design brief.
- **D2**- Draw a labelled picture of their product, which may include parts, components, materials.
- **D4**- Write a list of the materials/ ingredients/tools they will need.
- **MC1**- Cutting- Mark and measure materials before cutting. Cut paper and other materials safely and with increasing accuracy.
- **MC2**- Joining- Begin to choose the most effective joining methods for the task/materials.
- **MC3**- Testing- Test their product as they work, to see if it meets the requirements of the intended user.
- **MC4**- Improving- Apply their knowledge of materials to make a structure stiffer/ more stable as they work.
- **MC5**- Extra component- explore and use a simple mechanism (axels)
- **E1**- Positive- Describe what went well and which aspects of their product they are pleased with.
- **E2**- Critique- Describe anything that didn't work as well and any changes they had to make.
- **E3**- Audience- Discuss what the intended user might think about the product.
- **E4**- Improve- Suggest how their product could be improved.

Science

National Curriculum Objectives

- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Knowledge and Skills Progression

Working Scientifically

E1: ask simple questions and recognise that they can be answered in different ways

E2: observe closely, using simple equipment

E3: perform simple tests

E4: identify and classify

E5: use their observations and ideas to suggest answers to questions

E6: gather and record data to help in answering questions

Working Scientifically Suggestions

- performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'
- comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs)
- observe closely, identifying and classifying the uses of different materials, and recording their observations.

Vocabulary

rough, smooth, stretchy, stiff, bending, twisting, stretching, elastic, foil, dull, waterproof, absorbent, fabrics.

History

National Curriculum Objectives

- How things have changed over time - have an understanding of chronology
- Significant historical events, people and places in their own locality.

Knowledge and Skills Progression

U3: Begin to describe similarities and differences.

E3: Look at objects from the past and try to interpret facts from it.

I2: Use books, videos, photographs, pictures and artefacts to find out about the past.

C4: Use a timeline to understand a significant historical events.

O3: Talk and/or draw about things from the past.

Computing

National Curriculum Objectives

- CS1 Know that in Scratch, a stage is a background
- CS2 Know that in Scratch a sprite is something that can move or act
- CS3 Know that blocks are individual instructions and can be sequenced into scripts to program a sprite
- CS4 Know how to create and edit a sprite / background and create new costumes
- CS5 Know how to use control blocks, including when clicked to run a program and wait block
- CS6 Know how to use looks blocks, including say and switch costume
- CS7 Know how to step through a script to look for bugs
- CS8 (Can differentiate between an algorithm, code / program and running code
- CS9 Know that they can plan and create their own programs

Application

To design, make and evaluate a moving vehicle.

Children to explore own ideas in groups – this will be completed through planning, designing, making and evaluating their vehicle.

Wider Curriculum Opportunities

Writing

Traditional Tales

Reading

If you were Aboard the Titanic by Josh Gregory

Computing

See above

Enrichment

Home Learning

Evaluation Notes

Ensure resources are ordered in advance. Children will need to bring in small cardboard boxes to make vehicles.

Stand-alone objectives to be covered this term

RSE/PSHE

Units to cover

RSE
Module 2 Unit 1

PE

National Curriculum Objectives

Knowledge and Skills Progression

Gymnastics Unit 2

Comment on aspects of own and others performances.
Perform with control and consistency basic actions at different speeds and on different levels.
Create and perform a simple sequence
Show contrasts in gymnastics shapes and actions.
Work to improve flexibility and strength.
Attempt to use rhythm whilst performing a sequence.
Use core strength to link gymnastic elements e.g. back support and half twist.
Remember and repeat sequences.
Reflect on own performance and use scoring system to judge performance.
Develop character and maturity to work in close proximity with others
Key vocab: jump, sequence, egg roll, log roll, forward roll, log roll, travelling, shapes, height, balance

Run, Jump and Throw Unit 2

Make choices about appropriate throws for different types of activity.
Can identify areas of activities that need improvement e.g. power in throws to throw further.
Develop power, agility, coordination and balance over a variety of activities.
Can throw and handle a variety of objects including quoits, beanbags, balls, hoops.
Can negotiate obstacles showing increased control of body and limbs.
Use agility in running games
Apply skills in a variety of activities
Practise to improve skills
Discuss thoughts and feelings around physical challenges and what it means to be a team player
Work cooperatively to complete running, jumping and throwing tasks
Consider others when playing games to respect their space and boundaries
Key vocab: jump, run, walk, throw, ladders, hurdles, standing long jump, aim, target, baton, underarm, overarm, sprint

Music

Orchestral Instruments: Traditional Stories

Cooking in the Curriculum

Cous Cous Salad