Granby Junior School

STEM Teaching and Learning Policy

Review Date	Approved by	Governor Minute Reference
Dec 2024		

Date: September 2022

The new 2022 policy was created after a whole school review of Science, Technology, Engineering and Mathematics in the curriculum and written to reflect updated requirements.

Introduction

This document is a statement of the aims, principles and strategies for the teaching and learning of STEM at Granby Junior. It has been designed to support the existing

school policies of the subjects: Science, Technology (Computing and DT), Engineering and Mathematics.

This policy will be reviewed by the Science Co-ordinator, in conjunction with the leads of Technology and Mathematics in September 2024, or as required by the School Improvement Plan.

Curriculum Statement

Intent

Granby Junior School is committed to providing pupils with a variety of creative teaching and learning opportunities in all areas of Science, Technology, Engineering and Maths (STEM). We contribute to developing the young workforce by equipping our children with knowledge and experience of STEM in multiple contexts.

At Granby, STEM learning is for all of our pupils and we strive to achieve gender balance and equality in the delivery of STEM and access to STEM learning. We aim to stimulate, in all our pupils, a love of STEM which can be carried forward in their future careers.

At Granby Junior School, we aim to

- Equip teachers with the knowledge, skills and confidence to deliver STEM activities
- Provide a wide variety of high-quality STEM opportunities to stimulate an interest and enthusiasm in STEM for all
- Develop a positive attitude to STEM as an interesting and exciting subject in which all learners gain success and enjoyment
- Develop leadership, communication and employability skills in STEM
- Build confidence and competence in applying STEM skills to solve problems, think creatively, work collaboratively, analyse information and make informed decisions
- Make connections between STEM skills with learning, life and work
- Facilitate leadership opportunities for pupils to discover, create, inspire and lead in STEM
- Address stereotypes and improve gender balance associated with STEM subjects and careers
- Deepen knowledge of STEM careers and career pathways
- Work in partnership with community members to enhance STEM opportunities and learner experiences

Implementation

Learning & Teaching Opportunities for STEM will be explored throughout the school year. Teacher planning will make clear links with Science, Technologies, Engineering and Maths guided by the school Curriculum.

STEM will be taught through Science, technology (including Computing) and engineering based projects. For example, Year 6 complete an engineering project linked to the local viaduct structure, whilst exploring career roles within the railway industry. Maths will provide rich contexts for the application of STEM skills.

Granby Junior School will provide pupils with opportunities to participate in practical STEM investigations and challenges which will be embedded in everyday learning experiences. To generate enthusiasm for STEM we will seek out nationally recognised events for pupils to participate in including Internet Safety Week, Maths money matters week and British Science Week.

Career posters linked to curriculum topics will displayed in all classroom to inspire children to consider STEM-based careers. Pupils will also explore a variety of STEM careers during Careers' Week. We will work with community STEM ambassadors and local companies to deliver a Year 5/6 bi-annual Careers Fair.

Pupils will take part in a wide variety of local and national STEM challenges and competitions such as Creating Engineers, Young Enterprise Challenges, as well as Eco initiatives. STEM ambassadors will be present in each class and will promote extra-curricular STEM activities that will be offered to all pupils.

Impact

Granby Junior School pupils will experience a curriculum through which they learn about the world of work and job possibilities and which makes clear the strengths and skills needed to take advantage of these opportunities.

Our pupils will develop skills for learning, life and work as an integral part of their education and be clear about how all their achievements relate to these. They will experience a learning environment that recognises and promotes diversity and

supports them to understand that it is everyone's responsibility to challenge discrimination.

Through Enterprise projects, STEM ambassador visits and class discussion, pupils will develop understanding of the responsibilities and duties placed on employers and employees; develop understanding of enterprise, entrepreneurship and self-employment as a career opportunity and know where to find information and access support making effective use of online sources.

Equality and Inclusion

Children of all abilities enjoy and benefit from the study of STEM subjects at Granby Junior school, and teachers are able to adapt teaching to respond to the strengths and needs of all pupils enabling them to achieve.

Teachers have a secure understanding of how a range of factors can inhibit pupils' ability to learn and know how best to overcome these through adaptive teaching. High-quality teaching approaches to engage and support the needs of all pupils are used within classrooms and outside environments during STEM lessons. Assessment of pupils' progress is employed to identify barriers to learning and develop strategies to support all pupils through a graduated response – including but not limited to those with SEND, those of high ability, and those with English as an additional language.

Adaptive STEM subject teaching focuses on the whole class while providing scaffolding such as differing levels of support, access to resources, modelled first step examples or focused questioning to those who need additional initial support or challenge in order to access the same ambitious curriculum and meet our high expectations.

Diversity

At Granby Junior school our curriculum offers a diverse view of the world, beginning in our local community and extending beyond. Through the lenses of British values, children are positively exposed to a range of role models, reflected within the wider society, redressing the balance seen within our local community.

In STEM subects, children learn about diversity both in terms of cultural diversity and that of gender. This is shown by celebrating cultural and gender models including: Ada Lovelace, Mae C Jemison, Jonathon Ive, Elijah McCoy, Dr. Aprille Ericsson-Jackson, Heddy Lemarr, Patricia Bath and Nikola Tesla.

Resources

Physical resources are kept centrally in a designated science, Maths, Technology cupboards. Individual teachers are responsible for collection and return of resources. Shortages and breakages should be reported to the subject leader. Computing equipment is allocated to each year group and monitored by the IT coordinator.

A large range of non- fiction books and encyclopaedias are housed in the school library. These can be accessed by the children on a class rota basis.