

Leintwardine Endowed CE Primary School Learning Journey Itinerary

'Letting Our Light Shine'

SUBJECT : D&T

YEAR : A

TERM : Summer 2

YEAR GROUPS : 3/4

Key Question: How can I program something physical?

Previous Knowledge – We would expect children to already be able to:

- create and debug simple programs
- recognise common uses of information technology beyond school
- use technology purposefully
- understand what algorithms are
- design purposeful, functional, appealing products
- generate, develop, model and communicate their ideas through talking, drawing and mock-ups
- evaluate their ideas and products

END OF UNIT OBJECTIVES

Some children will not yet have met what is expected and will show that they are emerging because they can:

- > with support build ideas by discussing, annotating diagrams and writing instructions
- > begin to explain how embedded systems monitor and control products
- > with guidance, explain how computer scientists have helped shape the world
- > develop simple prototypes of a computer-controlled electrical system with help
- > incorporate one electrical components in my system
- > improve prototype designs by 'debugging' my software and/or hardware with guidance
- > follow a class design brief for a product
- > develop ideas with support for their product through discussion and annotated sketches
- > following guidance, incorporate electrical systems in my product design
- > With aid, suggest ways in which a given product idea might be developed and improved
- > debug a defective algorithm for a given product idea with guidance
- > develop and debug my own computer controlled product ideas with support
- > with support, make prototype models to communicate their ideas
- > control my prototypes using electronic components and computers
- > explain ways in which I debugged and improved my programs for controlling products
- > explain how I learned from others and improved my own designs
- > identify ways in which my DT and programming skills have developed, and ways in which I could further develop my learning

Most children will show that they have reached the expected level because they can:

- > communicate and develop their ideas by discussing, annotating diagrams and writing instructions with some help
- > begin to explain how embedded systems monitor and control products
- > explain how computer scientists have helped shape the world with some support
- > develop prototypes of a computer-controlled electrical system
- > incorporate one or more different electrical components in my system
- > improve prototype designs by 'debugging' my software and/or hardware with some support
- > develop a design brief for a product
- > develop ideas for their product through discussion and annotated sketches
- > incorporate electrical systems in my product design
- > suggest ways in which a given product idea might be developed and improved
- > debug a defective algorithm for a given product idea
- > develop and debug my own computer controlled product ideas
- > suggest ways in which models can better communicate ideas than written/verbal descriptions alone
- > make prototype models to communicate their ideas
- > control my prototypes using electronic components and computers
- > explain ways in which I debugged and improved my programs for controlling products
- > explain how I learned from others and improved my own designs
- > identify ways in which my DT and programming skills have developed, and ways in which I could further develop my learning

Some children will have gone beyond the expected level and will show that they are exceeding because they can:

- > independently share ideas by discussing, annotating diagrams and writing instructions
- > being to explain and demonstrate how to embed system monitors and control products.
- > explain how computer scientists have helped shape the world with examples
- > develop prototypes of a computer-controlled electrical system and explain how they work
- > incorporate one or more different electrical components in my system
- > improve prototype designs by 'debugging' my software and/or hardware with some support
- > independently develop a design brief for a product
- > develop ideas for their product through detailed discussion and annotated sketches
- > incorporate electrical systems in my product design independently
- > suggest detailed ways in which a given product idea might be developed and improved
- > independently debug a defective algorithm for a given product idea
- > suggest ways in which models can better communicate ideas than written/verbal descriptions alone
- > make detailed prototype models to communicate their ideas
- > control my prototypes using electronic components and computers
- > explain ways in which I debugged and improved my programs for controlling products
- > explain how I learned from others and improved my own designs
- > identify ways in which my DT and programming skills have developed, and ways in which I could further develop my learning

ASSESSMENT OPPORTUNITIES

Questions during lessons., work created in lesson. Kahoot quiz.

ENRICHMENT OPPORTUNITIES

Helping children to remember more
Children design and create their own products.

SUBJECT SPECIFIC VOCABULARY

Computer program, embedded system, monitor, control, program, prototype, model, computer-aided designs, evaluate

CROSS-CURRICULAR LINKS

Links that we can make to help children make sense of what we want them to know and be able to do.
Computing – Programming