ALMOND HILL JUNIOR SCHOOL MEDIUM TERM PLAN

TOPIC TITLE/SUBJECT: Computing - Data handling – micro:bit **YEAR GROUP: 5** **TERM: Spring**

Vocabulary		Skills	What we already know
Computational thinking Algorithms Patterns Logical reasoning Evaluation Data Programming Sequencing Selection Repetition	Inputs Outputs Sensors Tinkering Testing Debugging micro:bit Graphical programming language	-can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation -have repeated practical experience of writing computer programs in order to solve problems -can evaluate and apply information technology -are responsible, competent, confident and creative users of information and communication technology *Understanding, locating and using data* (understand what data is/ classify data/ identify ways that data might be used) *Exploring the micro:bit's sensors* (understand that some devices uses sensors/ write simple programs using sensors/ use the BBC micro:bit to collect data) *Unplugged lesson designing gadgets with sensors* (explain how repetition is used when programming sensors/ follow design criteria to design a product/ write algorithms that show how sensors will be used) *Using sensors in algorithms and programs* (know that data can be used as a condition in selection/ explore the effects of changing the value of data in programs/ write programs that use data as a condition) *Programming digital assistants* (read and write algorithms using selection/ identify how digital assistant might work/ write a program to use a micro:bit as a digital assistant)	This unit assumes that learners will have prior experience of programming using a block-based language (eg Scratch, Logo) and understand the concepts of sequence and repetition (Y3 and Y4). Key stage 1- focus on floor robots and ScratchJr.

Application/ Outcomes

Research lesson on understanding, locating and using data: learn about data. Research data on a chosen person and explore ways this data can be grouped. Consider the data that organisations might hold on them and the reasons that they have this data. Conclude the lesson by finding out about recent cases where collected data has been misused.

*Exploring the micro:bit's sensors: G*o on a treasure hunt to find data values relating to the school. Learn about sensors and write simple programs using the MakeCode editor to use the BBC micro:bit to record the temperature in different locations around the school. Consider what the data they have collected show and identify any patterns.

*Unplugged lesson designing gadgets with sensors: C*onsider the need for sensors to continually check for changes, developing their understanding through the use of unplugged activities and by writing algorithms using repetition and selection. Apply their knowledge and understanding to design a gadget using a sensor and selection and evaluate their work against the set design criteria.

Using sensors in algorithms and programs: Learn how data collected by the micro:bit's sensors can be used as a condition in programs. Explore the effect of changing the values and use this knowledge to plan, program and debug a micro:bit as a temperature warning system similar to those found in vehicles.

*Programming digital assistants: U*se unplugged activities to identify how more than one condition can be used with selection statements. Consider how selection might be used by digital assistants by planning and role-playing a program that selects clothes for the user based on the temperature. Write a program to use the BBC micro:bit as a digital assistant and compare it with other digital assistants.

Other/Cross Curricular Links

KS2 geography curriculum: use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods including … digital technologies

Additional Skills: design thinking, team working, problem solving, researching, debugging

Adaptation for SEND

- Adapted tasks
- Adapted resources
- Additional support