Aims and Purposes

The Computing curriculum @ Newham Bridge should offer opportunities for our children to:
- Develop their understanding of the principles and concepts of computer science.
- Develop their skills in using hardware, software and applications to manipulate information in the process of problem solving, recording and creating of digital content;
- Develop a high quality computing education which equips them to use logical thinking and creativity.
- Develop their understanding of how digital systems work and to become digitally literate individuals.
- Explore their attitudes towards ICT, its value for themselves, others and society, and their awareness of its advantages and limitations.

Computer Science

Children @ Newham Bridge should acquire and develop the skills associated with Computer Science in order to:
- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and various forms of input and output.
- Use logical reasoning to explain how some algorithms work and detect and correct errors in algorithms and programs.
- Understand computer networks including the internet; how they can provide multiple services such as the world wide web.
- *In the Early Years*: Use familiar objects and common shapes to create and recreate patterns and build models. Talk about why things happen and how things work. Look closely at similarities, differences, patterns and change. Complete a simple program on a computer.

Information Technology

Children @ Newham Bridge should acquire and develop skills associated with Information Technology in order to:
- Use search technologies effectively.
- Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- Acquire and refine the techniques e.g. saving, copying, checking the accuracy of input and output needed to use ICT;
- Practise mathematical skills e.g. ordering numbers including negative numbers, measuring and calculating, drawing and interpreting graphs and bar charts in real contexts;

- Learn why logical, numerical and mathematical skills are useful and helpful by: collecting data, analysing and evaluating it, making inferences or predictions and testing them, drawing and presenting conclusions.
- *In the Early Years*: Know that information can be retrieved from books and computers. Write their own name and other things such as labels and captions. Record, using marks that they can interpret and explain. Interact with age-appropriate computer software. Use simple tools and techniques competently and appropriately. Select appropriate resources and adapt work where necessary.

Digital literacy

Children @ Newham Bridge should acquire and develop skills associated with Digital Literacy in order to:
- Understand the opportunities networks offer for communication and collaboration.
- Be discerning in evaluating and presenting data and information.
- Be able to use technology safely, respectfully and responsibly by recognising acceptable/unacceptable behaviour;
- Be able to identify a range of ways to report concerns about content and contact (in lIne with the school's E-Safety Policy).
- *In the Early Years*: children show an understanding of how to transport and store equipment safely.

Language and Communication

Children @ Newham Bridge should:
- Develop language skills by writing and presenting their own ideas, both physically and electronically.
- Use age appropriate technical vocabulary.
- Read non-fiction and extract information from sources such as reference books and the internet.
- Read fiction and extract themes and ideas which may be useful in solving problems.

Values and Attitudes

Children @ Newham Bridge should:
- Work with others, listen to new ideas and recognise expertise and treat them with respect.
- Acknowledge the ownership of ideas and recognise the value of information held on IT systems e.g. recognising how much work has gone into producing a computer file/app/program, and how easily careless access and lack of attention can destroy it;
- Be aware of the security of their own and other people's personal information in electronic form and understand some of the ways they can protect themselves and others.
- Recognise the importance naming, saving and printing output when claiming ownership of files.
- Be creative and persistent when assembling a computer file from a large amount of source material.
- Consider the origin and quality of information and its fitness for purpose.
- Evaluate critically their own and others' use of ICT;
- Recognise the strengths and limitations of ICT.
- Develop knowledge and understanding of important ideas, processes and skills and relate these to everyday experiences;

Building on Children's Earlier Experiences

Most of the children will have used a computer or mobile device at home. The differing background children have in computing capability offers a significant challenge to us at Newham Bridge. Children who have access to ICT outside school often have greater skills in handling hardware and software. However, they may not have the full range of ICT capability expected in the programme of study. By observing children's developing ICT capability as they move through the school, we will be able to ascertain what expectations, activities and opportunities would best support their learning.

Progression

To ensure children make progress in computing, teaching should promote opportunities for children, as they move through the Key Stages, to progress:

from using single forms of information	to combining different types of information, matching the form of presentation to the audience
from personal use of ICT	to using ICT to meet the needs of, and communicate with others
from using ICT to replicate and enrich	to using ICT for purposes that could not have been envisaged without it (to solve problems)
from using everyday language to describe work with ICT	to increasingly precise use of technical vocabulary and ways of recording;
from using ICT to address a single task	to addressing more complex issues, balancing needs and resources.
from organising information as separate items	to organising information in sequences and more complicated, interactive, structures
from initial exploration of ideas and patterns	to more systematic use of ICT for analysis and design.

Assessment

Assessments of the children's attainment in computing will be carried out in line with Newham Bridge's own Age Related Expectations Assessment document (revised Sep 2016) This allows staff teaching computing to document progress and identify areas of development for all children from Y1 to Y6. These statements support, challenge and extend a child's understanding of computing against age related expectations. It will also support teachers in planning appropriately for the children in their class.