Key Stage 2 Computing Curriculum – The Main Ideas

Computing: Key Stage 2			
Create programs	**Develop programs**	**Reasoning**	**Networks**
Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	*Pupils should be taught to use sequence, selection, and repetition in programs; work with variables and various forms of input and output*	*Pupils should be taught to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs*	*Pupils should be taught to understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration*

Search engines	**Using programs**	**Safe use**
Pupils should be taught to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	*Pupils should be taught to select, use and combine a variety of software (including internet services) 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*	*Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact*

Year 3

Create Programs:

- Can I write programs that accomplish a specific goal? *e.g. BeeBot/Scratch*

Develop Programs:

- Can I design a sequence of instructions, including directional instructions? *e.g. Scratch/BeeBot*
- Design instructions unplugged (on paper) and allow pupils to debug these.

Reasoning:

- Can I discern when it is best to use technology and where it adds little or no value?

Networks:

- Can I navigate the web using simple searches?

Search Engines:

- Can I use a range of search software for similar purposes (discuss differences in information and why this happens).
- Can I collect and present information? *e.g. create a powerpoint/splice video*

Using Programs:

- Can I understand what computer networks do and how they provide multiple services?

Safe Use:

- Can I discuss how to use technology safely and respectfully?
- Can I know different ways to get help if I am concerned with something online?

Year 4

Create Programs:

- Can I give an on-screen robot specific instructions to get from A to B? *e.g. Scratch/Kodu*

Develop Programs:

- Can I experiment with variables to control models (find the best fit or most efficient method)?

Reasoning:

- Can I make an accurate prediction and explain why I believe something will happen? (Linked to programming.)

Networks:

- Can I explain how to search for specific information and discern which information is useful and which is not?

Search Engines:

- Can I select and use software to accomplish specific goals? *e.g. which software would be best for…?*

Using Programs:

- Can I produce and upload a podcast?

Safe Use:

- Can I recognise acceptable and unacceptable use of technology?
- Review Year 3 statements.

Year 5

Create Programs:

- Can I use technology to control an external device? e.g. crumble

Develop Programs:

- Can I develop a program that has specific variables identified? https://www.bbc.co.uk/bitesize/topics/zs7s4wx/articles/zw3dwmn

Reasoning:

- Can I analyse and evaluate information reaching a conclusion that helps future developments? *e.g. how could we do this in a more efficient way next time? How could this program be improved?*

Search Engines:

- Can I understand how search results are selected and ranked when we conduct an online search? *e.g. paid advertising*

Using Programs:

- Can I combine sequences of instructions and procedures to turn devices on and off? *e.g. crumble/scratch/home devices for lights etc.*

Safe Use:

- Can I understand that I have to make choices when using technology and that not everything is true and/or safe?
- .Recap Year 3 and 4 objectives.

Year 6

Create Programs:

- Can I write a program that contains a complex sequence of instructions? e.g. crumble

Develop Programs:

- Can I develop a sequenced program that has repetition and variables identified?

Reasoning:

- Can I design programs that use repetition and a 2-way selection? *e.g. If x, then stop, but if y, then go.*

Search Engines:

- Can I show awareness that some search engines may provide misleading information? *e.g. biased/Wikipedia/fake news*

Using Programs:

- Can I present data in a way that makes it easy for others to understand? *e.g. spreadsheets/graphs*

Safe Use:

- Can I demonstrate an increasing awareness of the dangers in using aspects of IT and know how to report any concerns?
- Recap Year 3,4 and 5 objectives.

Useful Resources:

Barefoot Computing – computer science curriculum resources

https://www.barefootcomputing.org/my-barefoot-my-curriculum

BBC Computing KS2 – great for introducing new terminology in an easy to understand context

https://www.bbc.co.uk/bitesize/subjects/zvnrq6f

Be Internet Awesome (Google)

https://beinternetawesome.withgoogle.com/en_uk/toolkit

STEM computing resources – ideas for activities to introduce a range of concepts

https://www.stem.org.uk/primary-computing-resources

Code-IT – lots of planning ideas and resources across curriculum, especially good for Scratch and Crumble

http://code-it.co.uk/csplanning.html

Childnet – safety resources

https://www.childnet.com/resources/online-safety-and-computing

Kid Smart – safety and how to report concerns

http://www.kidsmart.org.uk/beingsmart/

NSPCC – keeping children safe online

https://www.nspcc.org.uk/preventing-abuse/keeping-children-safe/online-safety/