KEY STAGE 1	Computer Science	Digital Literacy	E-Safety
understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	⭐		
create and debug simple programs	⭐		
use logical reasoning to predict the behaviour of simple programs	⭐		
use technology purposefully to create, organise, store, manipulate and retrieve digital content		⭐	
recognise common uses of information technology beyond school		⭐	
use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.			⭐

Computer Science Year 1	Example Activities
Objectives: Pupil should understand that both computers and humans can follow instructions Pupils will learn that an algorithm is a precise way of solving a problem Pupils will extend their knowledge of following instructions and playing games to recognise and give examples of algorithms in everyday life Pupils will create, test, refine their own precise and clear algorithms for a specific purpose	Following instructions revisited - Storyboard of instructions for everyday activities e.g. cleaning teeth, making sandwich Following directional instructions – link to PE /Cooking activities Writing instructions others can follow - literacy Human robot games in classroom – human crane code-it website Using a Bee Bot to achieve a specific goal such as; parking in a spot, going to the number 4 on a mat, going to the first letter of your name on a mat, knocking down the skittles, avoiding certain obstacles etc. Use estimation, trial and error, encourage discussion and prediction, plan the programming sequence before executing and begin to record the sequence. (Maths Y1; geometry; position, direction, movement, whole, ½, ¾ turns) Stories - Beebot can get the different fruit from Handa's Surprise, can be the wolf in the Three Little Pigs going to each house in turn, can be dressed up as the Rainbow Fish, Little Red Hen, Going on a bear Hunt, the witch from Hansel & Gretal...any story where a character moves, ie any story! Beebot can be the postman delivering letters to only the even numbered houses on a road. It can deliver letters to house number 1 and then the next child can roll a dice and they have to add that number on to see which house to visit next. Beebot could also be a doctor doing house visits. Barrier game (like battleships) - 2 groups with 2 Beebots, with barrier. 1 group place their beebot in a square on grid and then instruct the other group ot move theirs to same place.Play skittles where Beebot has to knock over as many skittles as it can (felt tip pens standing on ends). Beebot slalom. Guess Who game or Beebot detective game where the children have to solve the problem and then send Beebot to the right answer card/picture. Beebot is dressed as a construction vehicle and has to reverse to load/unload into tight spot. Beebot is a plane/train/taxi/boat and has to visit certain destinations on the map. Give Beebot loads to carry, investigate whether it slows Beebot down, can it move the load up a slope? Can be linked to "The Little Engine That Could" story. BBC resources **Resources:** BeeBots BeeBot mats (or similar/homemade floor mats) iBoard; Cheese Sniffer, Pollen Hunter, Position Them - The Tree, Position Them – The Picnic, Dance Moves, Fly Catcher, Lily Hop Espresso – KS1 videos and activities - search for sequence, maze or time Espresso Coding – Unit 1a, 1b (subscription paid in Camden until October 2015, lesson plans included) 2Code (part of Purple Mash, need subscription) first few "Chimp" activities Busy Things (part of LGfL), age 5-6; Maths; Shape, Space & Measures – maze and directional

	activities
	JiT Turtle (free on LGfL)
	2Go (2Simple Infant Video Toolkit)
	http://www.bbc.co.uk/schools/0/computing/28972462
	http://www.code-it.co.uk/unplugged/humancraneplan.pdf
	SWITCHED ON COMPUTING SCHEME; UNITS 1.1, 1.2 (needs to be purchased)

Digital Literacy Year 1	**Example Activities:**
Objectives: Pupils will be able to recognise different types of digital content and name them (photos, videos, text, audio, images). Pupils will learn they can be manipulated and combined to create multimedia outcomes. Pupils will be able to save and retrieve their work.	Use appropriate software and devices for different purposes; storytelling, non-fiction writing, posters, postcards etc using a variety of media (Cross curricular links) Build on mouse and keyboard skills such as shift, arrow keys etc whilst creating content. Begin to proof read work. Children given experience of using variety of digital devices including tablets, PCs, laptops, cameras and microphones. **Resources:** 2Simple; 2create a story, 2Publish, Book Creator app Sonic Pic app Doodle Buddy app Story Creator app (alligator apps) Espresso book making templates Purple Mash (subscription needed) SWITCHED ON COMPUTING SCHEME; UNITS 1.3, 1.5, 1.6 (needs to be purchased)
Pupils will be able to name different digital devices. Pupils will extend their knowledge of how technology is used in everyday life.	Technology photo walk around the school to see where technology is used Homework task could be asking parents or adults if/where they use computers in their work or places they visit such as docs/dentists/supermarkets

	BBC resources **Resources:** Espresso search for videos on technology http://www.bbc.co.uk/schools/0/computing/28972462 SWITCHED ON COMPUTING SCHEME; UNITS 1.4 (needs to be purchased)
E-safety Year 1 **Objectives:** Recognise the need to know the difference between personal and private information. Know what to do if they find something inappropriate online. Use a password to access the school network or other accounts. Know to treat people politely online.	**Example Activities:** Watching the ThinkUKnow movie and following up with plenty of discussion and/or role play using the mask templates provided on CEOp resource site **Resources:** ThinkUKnow Lee & Kim videos and supporting resources – include plenty of discussion ChildNet resources – DigiDuck http://www.bbc.co.uk/schools/0/computing/28972462

Computer Science Year 2	Example Activities :
Objectives: Pupils will begin to be more accurate with their algorithms. Pupils will understand the need to be unambiguous and accurate for their instructions to be followed as intended Pupils will persevere with problem solving approaches to debugging (detecting and correcting errors) Pupils will extend their experience of prediction when using robots or coding software	Following instructions revisited – understanding objects respond to commands Following directional instructions – develop understanding of positions, direction, movement and turns (Maths Y2 geometry; use mathematical vocabulary including rotation, anti-clockwise, clockwise) Writing instructions others can follow – literacy/science/cooking Human robot games in classroom – with extended sequence of instructions Whichever software or app is being used, it is the process of computational thinking that is important: Children need to discuss, predict, estimate, try, refine, debug and extend their programming sequences. They should be encouraged to walk out a route or write down a list of commands and set challenges for friends. E.g.; draw a flowchart to create the perfect jam sandwich, make a list of instructions to solve your own A.L.E.X. maze creation before giving to friend, longer sequence of instructions for example making Bee bot visit all the even house numbers with in one procedure. BBC resources **Resources:** BeeBot BeeBot app A.L.E.X. App http://www.bbc.co.uk/schools/0/computing/28972462 2Code (part of Purple Mash, need subscription) some of the "Chimp" activities Espresso Coding – units 2a, 2b (subscription paid in Camden until October 2015, lesson plans included) Kodable app Espresso – KS1 videos and activities - search for sequence, maze or time 2Go (2Simple Infant Video Toolkit) In teacher settings more advanced programming options SWITCHED ON COMPUTING SCHEME; UNITS 2.1, 2.2 (needs to be purchased)
Digital Literacy Year 2	Example Activities:
Objectives: Pupils will collect, organise and manipulate data to be able to examine the data and find answers Pupils will consolidate and extend knowledge of saving and retrieving work (understand My Documents, class folders, shared folders etc)	Use appropriate software and devices for different purposes; storytelling, non-fiction writing, posters, postcards, graphs etc using a variety of media (Cross curricular links). Consolidate appropriate keyboard and mouse skills to use computer efficiently. Safe and effective searching on the internet for research purposes Children extend experience of using variety of digital devices including tablets, PCs, laptops, cameras and microphones **Resources:** 2Simple; 2create a story, 2Publish, 2create a superstory, 2Publish+, 2Graph, 2Count Book Creator app Sonic Pic app

	Pic Collage app ArtSet app Espresso book making templates Purple Mash (subscription needed) SWITCHED ON COMPUTING SCHEME; UNITS 2.3, 2.4, 2.6 (needs to be purchased)
Pupils will extend their knowledge of how technology is used in everyday life and across different professions.	**Example Activities:** Explore work within a profession; digital artist, navigation tools on ships/planes, how robots are used to help people. Technology walk around local area (smoke alarms, automatic doors, pedestrian crossings, white goods in kitchen etc) BBC resources **Resources:** Espresso – videos about robots being used in different walks of life http://www.bbc.co.uk/schools/0/computing/28972462
E-safety Year 2 **Objectives:** Pupils will begin to understand the different sorts of online communication (difference between playing a game online with an unknown person and emailing or texting a friend/relative) Importance of remembering passwords and keeping them private Appreciate that pop ups/hyperlinks will take them away from the main site Respect other peoples work that will be saved within a shared area	**Example Activities:** Continuous reinforcing of key messages of keeping personal information private, not sharing passwords, how to report and block. BBC resources **Resources:** ThinkUKnow Lee & Kim videos and supporting resources – include plenty of discussion ChildNet resources – DigiDuck http://www.bbc.co.uk/schools/0/computing/28972462 SWITCHED ON COMPUTING SCHEME; UNITS 2.5 (needs to be purchased)

KEY STAGE 2	Computer Science	Digital Literacy	E Safety
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 simple algorithms work and to 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	⭐		
Appreciate how [search] results are selected and ranked	⭐		
Use search technologies effectively		⭐	⭐
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		⭐	
Understand the opportunities [networks] offer for communication and collaboration	⭐	⭐	

Be discerning in evaluating digital content
Use technology safely, respectfully and responsibly; recognise
acceptable/unacceptable behaviour; identify a range of ways to report
concerns about content and contact

Computer Science Year 3	Example Activities:
Objectives: *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 simple algorithms work and to detect and correct errors in algorithms and programs*	Children should consolidate their understanding and confidence with direction, position and rotation when giving instructions to relevant robot. Development of computational thinking to be continued with lots of discussion, planning, children walking out /testing their instructions for robot, estimation, problem solving, trial and error, refining and extending their instruction sequences, as well as being encouraged to make them as concise as possible. Introduce the idea of repetition, as children use probots, LOGO or Move the Turtle to draw shapes. Explore irregular shapes and see if children can begin to predict what will happen if they were to repeat instructions with a 90 degree turn in and one with a 100 degree turn in, for example. If using A.L.E.X. To create challenges for others, ask the children to write down their solution but in the most concise way so instead of forward, forward, right, right etc it would be forward x2 or repeat 2... use Expresso coding to consolidate learning. Kodable introduces idea of "If" then. Can draw out flow charts using this idea...if hot then turn on fan if cold turn on heater. Making a cup of tea, if kettle empty then...etc BBC resources **Resources:** Probots Kodable Hopscotch Move the Turtle A.L.E.X. http://www.bbc.co.uk/schools/0/computing/28972462 Espresso Coding / 2Code/ Switched on?? LOGO
Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web *Appreciate how [search] results are selected and ranked* *Use search technologies effectively*	**Example Activities:** Introduce idea of computer networks by creating a physical chain using the children and send messages from one to another and justify choice of routes. Introduce child friendly search engines such as yahoo for kids, Kids click. Using "for kids" in search will yield more suitable results. Compare the results that different search engines produce using same one word search. Introduce multi word search. Does the order of the words change the result? Can the children work out why? BBC resources **Resources:** Internet search engines http://www.bbc.co.uk/schools/0/computing/28972462 Switched on??

Digital Literacy Year 3
Objectives:
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
Understand the opportunities [networks] offer for communication and collaboration

Example Activities:
Use a variety of software for different purposes to support work across the curriculum, to retell stories, create stories, write informative, non fiction texts in different styles. To use pictures and links where appropriate and to begin to add, or learn to create, animation to work if applicable. Use of recording or filming to support speaking and listening. To collect data, input it into appropriate software and then analyse findings and begin to draw conclusions.
Children should extend their understanding of how computers can connect people with email, social media, Skype etc...possibility of linking with other schools or via educational websites such as the National Space Centre.
Begin to look at blogs and see how an author/creator and link to audience and how people are free to then comment – discussion about audience and choosing appropriate comments. See 100wc.net

Resources:
2Create a Superstory
2Publish/+
Book Creator app
Sonic pic app
Puppet Pals app
Morph app
Stop Motion HD app

	Skitch app Kar2ouche school blogs 100wc.net <u>Switched on??</u>
E-safety Year 3 *Objectives:* *Be discerning in evaluating digital content* *Use technology safely, respectfully and responsibly;* *recognise acceptable/unacceptable behaviour; identify* *a range of ways to report concerns about content and* *contact*	**Example Activities:** Revisit Lee and Kim videos to ensure that the children are clear and reminded about keeping personal information private. Spend time exploring and discussion issues and learning points raised in CyberCafe (CEOP) and SMART films. Children can make advise poster for KS1 children, or posters to go near computers in class/ICT suite. BBC resources **Resources:** CyberCafe (CEOP) Lee & Kim (CEOP) SMART resources http://www.bbc.co.uk/schools/0/computing/28972462 <u>Switched on??</u>

Computer Science Year 4

Objectives:

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 simple algorithms work and to detect and correct errors in algorithms and programs

Example Activities:

Continue to develop children's ability to write instructions of increasing complexity and debug their work to achieve a specific goal. This must be supported by much discussion, peer sharing, questioning and articulation of code to support problem solving. Testing of each others work usually provides effective feedback. By Y4 a confident class can be introduced to Scratch. Begin with the children working out how to make a sprite move and the solve the problems that will naturally be articulated....can he go faster/ slower/ can he look like he is moving (ie change costumes), can they walk the other way, can we change the background, can they speak etc. Children can make 2 characters enter the stage from opposite sides, stop when they meet in the middle and then speak to each other in turn (speech bubbles), this can be topic related or could be a greeting card. Children can explore changing costumes by getting the dancing or jumping characters and making them do a dance or trampoline routine. Plenaries should always include children explaining how and why their code works with appropriate questions from the teacher to extend knowledge....can they jump higher? How do we reduce these 6 repetitive instructions (could we use repeat?)

Begin to use off screen activities to support computational thinking skills – such as play 20 questions...get the children to discuss why some questions are better than others....is it male? Is better than is it Justin Beiber? Begin to develop the idea of being as efficient as possible with code; compare children's code that has the same result but is written in different ways.

Use Lego WeDo to create models that are then computer controlled by the commands the children put together.

BBC resources

Resources:

Move the Turtle/ LOGO

Scratch

Probots

Kodable

Espresso Coding / 2Code/ Switched on??

Lego WeDo

http://www.bbc.co.uk/schools/0/computing/28972462

Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web

Appreciate how [search] results are selected and ranked

Use search technologies effectively

Example Activities:

Ask children why they think Google is the most used search engine? Is it because it brings best results?

Google ranks findings of a word search based on the importance of page – based on number of pages linked to it

Introduce the idea of bookmarking favourite/most useful sites so children can collect useful topic links.

Demonstrate how to open mulitple web pages without leaving the search (by right clicking on a result link and left clicking to open in a new tab).

Show less confident readers how to use IM Translator or iPad SpeakIT to read a passage from the web page, as this might be easier than the child reading the text themselves.

Consolidate skills such as right clicking on a picture to insert into work within their chosen software.

Use the CISCO activities to help explain how the Internet works with games to play and missions to accomplish

BBC resources

Resources:
Internet search engines
Google video on how searching works
Switched on??
Peter Packet CISCO.com
http://www.bbc.co.uk/schools/0/computing/28972462

Digital Literacy Year 4 **Objectives:** *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* *Understand the opportunities [networks] offer for* *communication and collaboration*	**Example Activities:** To develop children's competence using a variety of software for different purposes to support work across the curriculum; to retell stories, create stories, adapt stories, write informative, non fiction texts or persuasive texts. Make multimedia presentations using sound, links, pictures and animation to display learning in a range of subjects such as using Stop Motion to explain a scientific theory learned. To develop the pupils picture manipulation skills To collect data, input it into appropriate software and then analyse findings and begin to draw conclusions. To do more complex searches when interrogating data. Children should continue to extend their understanding of how computers can connect people with email, social media, Skype etc...possibility of linking with other schools or via educational websites such as the National Space Centre. Develop a class blog and use class time to look at feedback and new posts, with continued discussion about audience and appropriate, supportive comments. **Resources:** 2Create a Superstory 2Publish/+ Book Creator app Sonic pic app Puppet Pals app

	Morph app Stop Motion HD app Skitch app Kar2ouche school blogs J2E blogging 2Investigate Switched on??
E-safety Year 4 *Objectives:* *Be discerning in evaluating digital content* *Use technology safely, respectfully and responsibly;* *recognise acceptable/unacceptable behaviour; identify* *a range of ways to report concerns about content and* *contact*	**Example Activities:** Make sure that e-safety issues are continuously and appropriately discussed in class, when searching, communicating or blogging etc. Revisit resources and add new content if it is appropriate for the activities the class are involved in ie; beginning to own and use their own mobiles or all playing certain on line games. BBC resources **Resources:** Switched on?? SMART CyberCafe http://www.bbc.co.uk/schools/0/computing/28972462

Computer Science Year 5	**Example Activities:**
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	Revisit the pupils programming skills, consolidating understanding of repeat commands. Introduce the concept of loops, forever loops and forever if loops forever – can be discussed, created as a class or group or drawn out on paper away from the computer.
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	Loop – repeat 5; wake up, go to school, go home (school week). Repeat 5; wake up, go to school, go home, repeat 2: wake up, play, go to bed (7 day week). Repeat all the above x7 for a half term and continue to build up.
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Forever loop – moon orbits earth, Monday to Sunday, heart beats
	Forever if loop - fall in mud; clothes need cleaning. Run; heart beats faster
	Get the children to make their own examples of each type of loop.
	Create games in Scratch – maze game; reacting to colour, other sprites, make character move in 4 directions using arrow keys, add in enemies giggling around, create second level
	Create a 2 player game, such as a car racing game where the cars move using the arrow keys and restart if they hit the green surrounding or inside the track. A second player can operate his/her car by programming the a,s,d and w keys.
	Recreate some well known board games such as Whack-a-mole with characters appearing and disappearing quickly with the player having to click on them in time.
	Etch-a-sketch design.
	Pupils can be challenged to discover the bug in a given programme.
	Revisit Lego WeDo and then introduce Lego NXT and begin to programme robot to move and then to respond to loud sounds, distance or touching obstacles by using sensors and programming them accordingly.
	Continue with off screen activities that support computational thinking – such as the numbered balls hidden under plastic cups, in order of size, though not necessarily all numbers there. Ask child to find 86, ask other children to help/comment on choices and try to encourage the conclusion that the most effective strategy is to go for the middle cup each time; idea of divide and conquer; it is how a computer sorts data and is the most effective. Revist 20 questions and see if they can solve the game in as few rounds as possible. Discuss tactics (idea is you can get from 1,000,000 to 1 in 20 questions by using divide and conquer approach).
	Bbc resources
	Resources:
	Espresso Coding / 2Code/ Switched on??
	Scratch
	Espresso Coding
	Lego NXT
	http://www.bbc.co.uk/schools/0/computing/28972462
Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web	**Example Activities:**
	Use the Peter Packet activities, games and challenges on the CISCO website to increase the understanding of how computers send and receive information. Pupils should begin to understand

Appreciate how [search] results are selected and ranked *Use search technologies effectively*	the Internet is host to the World Wide Web, email, file transferring, chat rooms, newsgroups etc. Introduce idea that computers understand each other because they speak the same language, just as people in one country do – TCP/IT (transmission control protocol/Internet protocol) Introduce idea of each device having unique number called Internet Protocol address – show yougetsignal.com to discover IP address and run simple traces Watch videos; http://thekidshouldseethis.com/post/26674356049 http://www.ictvideohelp.co.uk/internet/internetpackages/internetpackages.html BBC resources **Resources:** CISCO.com yougetsignal.com http://www.bbc.co.uk/schools/0/computing/28972462 Switched on?? http://thekidshouldseethis.com/post/26674356049 http://www.ictvideohelp.co.uk/internet/internetpackages/internetpackages.html
Digital Literacy Year 5 **Objectives:** *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* *Understand the opportunities [networks] offer for communication and collaboration*	**Example Activities:** To build on the children's competence and confidence in using software for different purposes to support work across the curriculum; to write character descriptions, create persuasive texts for debate, retell a story from a different character's perspective, write informative and non fiction texts. Make multimedia presentations using sound, links, pictures and animation to display learning in a range of subjects. To use Green Screen within a range of curriculum areas to encourage clarity of speech, prose and argument. To encourage pupils to present their work and encourage appropriate and constructive peer comments. To collect data, input it into appropriate software and then analyse findings and begin to draw conclusions. To do more complex searches when interrogating data. Begin to use date handling to solve more complex mathematical problems such as price rises, bulk buying in tuck shop, a market stall with income and outgoings, creating formulae to make the football league reorganise teams automatically when a new score is input. Develop a class blog and use class time to look at feedback and new posts, with continued discussion about audience and appropriate, supportive comments. **Resources:** 2Create a Superstory 2Publish/+ Book Creator app

Sonic pic app
Puppet Pals app
Morph app
Stop Motion HD app
Skitch app
Kar2ouche
PowerPoint
Excel
2Investigate
Green Screen
J2E blogging
Switched on??

E-safety Year 5
Objectives:
Be discerning in evaluating digital content
Use technology safely, respectfully and responsibly;
recognise acceptable/unacceptable behaviour; identify
a range of ways to report concerns about content and
contact

Example Activities:
Understand that some websites are sponsored and are not necessarily the most useful.
Understand that content needs to be crossed checked to verify information. Use spoof websites for a classroom activity and discussion to illustrate this.
Introduce very specific and more accurate searching by using symbols such as – sign; Southampton – football will remove all references to Southampton FC. Try using * when searching for cities or lakes or mountains.
Continue with e-safety lessons, reacting to where the children are in their online behaviour, ie is it appropriate to start to discuss social media profiles and behaviour? Do parents need to be informed?
Children can create storyboards illustrating an online problem that is solved, showing clearly how the person came to solve it (in a similar way to the way the CEOP films always have a conclusion). Pupils can provide advise sheets or cartoon strips for others in the school.
BBC resources

Resources:
Jigsaw film (CEOP)
CyberCafe
Comic Life
Comic Strip app
2Publish+
http://www.bbc.co.uk/schools/0/computing/28972462

Computer Science Year 6
Objectives:
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 simple algorithms work and to detect and correct errors in algorithms and programs

Example Activities:
Extend the children's competence and understanding using Scratch. Their games or presentations can include broadcasts to be a trigger for something else to happen, variables for timers, life counters, speed or score. As throughout their previous computing experience, discussion, testing, commenting, debugging, reading and articulating the code they have written will support the achieving the objectives. Use planning sheets to help their plans develop clearly.
Children can progress onto random items to help them create quizzes, where the computer decides say a random number between 1 and 10 to add to another random number.
Pupils can be challenged to discover the bug in a given programme.
Code Kingdom is a great extension for the confident and able coder. They can play the game first of all and identify what they have to achieve.
They can then learn how to do the coding for themselves as they design their own planet – such as putting in buttons that will make something happen such as a bridge to appear etc. their designs can increase in complexity as their confidence grows.
Lego NXT – revisit what the children learned last year and present more difficult challenges such as following a white line to navigate in to a parking space using the light sensor.
To support the development of computational thinking skills, the children can be challenged to the weighing activity where they have to sort out identical looking objects according to their weight, using balance scales but using the least number of comparisons, it can be filmed, there definitely needs to be a "counter". Pupils can discuss their findings and see if they can find explanations.
BBC resources

Resources:
Scratch
Code Kingdoms
Lego NXT
http://www.bbc.co.uk/schools/0/computing/28972462
Espresso Coding / 2Code/ Switched on??

Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web
Appreciate how [search] results are selected and ranked
Use search technologies effectively

Example Activities:
Pupils can explore how to search for a file on the computer. Use the * symbol and examine the way the results are displayed.
Consolidate using symbols in an internet search, such as " ".
Continue to use the resources on the CISCO website
Encourage children to name their sources when using information from the Internet. A discussion on bias will often be appropriate here.
Revisit yougetsignal.com to consolidate understanding of how computers are identified and how traces can be checked.
Bbc resources
Revist videos http://thekidshouldseethis.com/post/26674356049

Resources:
CISCO.com Peter Packet activities
yougetsignal.com
http://www.bbc.co.uk/schools/0/computing/28972462

Digital Literacy Year 6
Objectives:

*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*
*Understand the opportunities [networks] offer for
communication and collaboration*

Example Activities:
To continue to use a variety of software for different purposes to support work across the
curriculum. Continue to make multimedia presentations using sound, links, pictures and animation
to display learning in a range of subjects. Continue to encourage pupils to present their work and
encourage appropriate and constructive peer comments. Each child will be encouraged to work at
their own level and improve where necessary. The content should be increasingly full and
sophisticated with age and experience, such as producing iMovie films exploring a geography,
history or science topic.
To collect data, input it into appropriate software and then analyse findings and begin to draw
conclusions. To do more complex searches when interrogating data. Begin to use date handling to
solve more complex mathematical problems.
Develop a public blog and use class time to look at feedback and new posts, with continued
discussion about audience and appropriate, supportive comments, perhaps about transition to
secondary school or about their experiences on school journey.
Have a skype conversation with other pupils or someone of interest such as a grandparent who
can answer questions on a topic such as WW2.

Resources:
2Create a Superstory
2Publish/+

	Book Creator app Sonic pic app Puppet Pals app Morph app Stop Motion HD app Skitch app Kar2ouche PowerPoint iMovie Excel 2Investigate Green Screen Skype J2E blogging Espresso Coding / 2Code/ Switched on??
E-safety Year 6 *Objectives:* *Be discerning in evaluating digital content* *Use technology safely, respectfully and responsibly;* *recognise acceptable/unacceptable behaviour; identify* *a range of ways to report concerns about content and* *contact*	**Example Activities:** Use the Jigsaw film to revisit and discuss their use of social media and audience, impact and behaviour. Make sure all children know what choices they have if they feel uncomfortable about something they have seen, read or heard online/by phone. Spend time discussing mobile phone use as Y6 is often the time the children get their first phone. Also need to discuss games, webcam use. Possibly use circle time or anonymous discussions to tackle issues if appropriate Y6 children could be encouraged to plan and take part in an e safety assembly for a younger class. BBC resources **Resources:** Jigsaw (CEOP) CyberCafe kidsmart.org.uk childnet.com http://www.bbc.co.uk/schools/0/computing/28972462