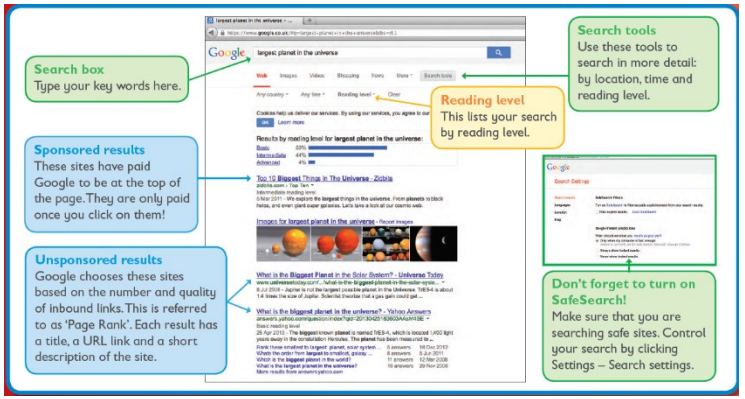
Year 5 We Are Web Developers.

Subject Specific Vocabulary		Software and Tools	Sticky Knowledge about.
Bias	To feel or show inclination or prejudice for or against someone or something.	Internet Safety Pages: CEOP: www.thinkuknow.co.uk. Know IT All: http://www.childnet.com/resources/kia. 	• I can check and comment on others' content. • I can see how Google chooses and shows web pages in a search. • I can name other search engines. • I can create and organise others' content on e-safety and using technology properly. • I can create and organise others' content for sharing worries about information seen and received on the web. • I can create and organise others' content for using the web in the right/wrong way. • I can credit others' information I use on the shared site. • I can decide if web sources are balanced and of a good quality. • I can proofread and correct mistakes in others' content. • I can use tools to get the best results in my web searches. • I can find and use information from different places to present a summary. • I can make useful and large changes to others' content when necessary. • I can explain how Google orders web pages in a search ('Page Rank').
E-safety	Being aware of how to stay safe online.		
Page Rank	A value assigned to a web page as a measure of its popularity or importance, used to determine the order in which search engine results are presented.		
Wiki	A website or database developed collaboratively by a community of users, allowing any user to add and edit content.		
Search Engine	A program that searches for and identifies items in a database on the World Wide Web.		
Revision History	Looking back to the changes made to a webpage over time.	**E- Safety**	
Unit Overview: In this unit, the pupils work together to create a website explaining e-safety and responsible online behaviour.		Cover aspects of e-safety, including appropriate conduct online, service terms and conditions, cyberbullying, illegal file sharing, and issues around access to online content. The responsible use of technology goes beyond e-safety, and might include such topics as 'green' computing, intellectual property, digital footprints and archiving transient data.	

Year 5 We Are Architects.

Subject Specific Vocabulary	
3D	3-D (three-dimensional) describes an image that provides the perception of depth.
Animation	Animation is a method in which pictures are manipulated to appear as moving images.
Gallery	A room or building for the display or sale of works of art.
Navigation	The act of moving around a website or computer screen, or between websites or screens
Screencast	Record or transmit video of data displayed on the screen of a computer typically with accompanying audio.
Sculpture	3D sculpting is when an artist sculpts a 3D object on a computer.
Virtual	Not physically existing as such but made by software to appear to do so.

Unit Overview …In this unit, the pupils research examples of art gallery architecture, before using Trimble SketchUp to create their own virtual gallery. Finally, they use the gallery to exhibit their own artwork.

Software and Tools

The National Gallery virtual tour: www.nationalgallery.org.uk/visiting/virtualtour/#/central-hall.

Virtual Art Space: www.3dvas.com

Contemporary gallery and museum design: www.e-architect.co.uk/art_gallery_buildings.htm

E- Safety

The usual precautions should be followed when the pupils are using the internet for their research.
If the pupils will be sharing their creations online they should take particular care to limit the sharing of personal information.
If using Google Earth to locate real or imaginary buildings, the pupils should not share the location of their home. When uploading examples of work to the virtual gallery, respect the intellectual property of the original artists.

Sticky Knowledge about Creating a virtual space.

- I can use the web to find out about virtual art galleries.
- I can create simple objects using SketchUp.
- I can create a simple gallery space in SketchUp.
- I can add furniture to my gallery in SketchUp.
- I can add my own artwork to my gallery.
- I can create a virtual tour of my gallery.
- I can find features that all art galleries share using the web.
- I can create a detailed 3D object using SketchUp.
- I can add textures and finishing touches to my gallery using SketchUp.
- I can create a virtual tour of my gallery with an audio commentary.
- I can create an attractive detailed 3D object using SketchUp.
- I can create a detailed series of rooms and spaces in SketchUp.
- I can create furniture for my gallery in SketchUp.
- I can use Movie Maker to edit the virtual tour of my gallery.

Year 5 We Are Artists.

Subject Specific Vocabulary		Software and Tools	Sticky Knowledge about Fusing geometry and art.
Geometric	A geometric pattern or arrangement is made up of shapes such as squares, triangles, or rectangles.	Geometric Islamic art: www.patterninislamicart.com/. Escher's art: www.mcescher.com Bridget Riley's art: www.karstenschubert.com/bridget-riley TurtleArt: http://turtleart.org/gallery/index.html. Terragen scenes: http://planetside.co.uk/galleries/terragen-gallery	• I can create a tessellating pattern. • I can write a program to draw a simple shape. • I can create a pattern using overlapping shapes. • I can create a pattern using different repeated shapes. • I can create a computer-generated image of a landscape. • I can create a tessellating pattern using more complicated shapes. • I can use repetition in Scratch to draw a complicated geometric shape. • I can use the tile clone tool to create a pattern using different kinds of shape. • I can create a computer-generated image of a landscape that looks good. • I can write blocks of script in Scratch to create a complicated geometric shape. • I can explain how computers create realistic landscapes.
Landscape	All the visible features of an area of land, often considered in terms of their aesthetic appeal.		
Op Art	Op art (Short for optical art), is a style of visual art that uses optical illusions.		
Sprite	A bitmap graphic that is designed to be part of a larger scene. It can either be a static image or an animated graphic.		
Symmetry	The quality of being made up of exactly similar parts facing each other or around an axis		
Tessellations	An arrangement of shapes closely fitted together, especially of polygons in a repeated pattern without gaps or overlapping.		
Unit Overview: The pupils use vector and turtle graphics to explore geometric art, taking inspiration from the work of Escher, Riley and traditional Islamic artists, as well as experimenting with complex 'fractal' landscapes.		**E- Safety** If the pupils use Google Image Search to study examples of artists' work, ensure that 'safe search' is locked to 'strict'. Precautions over the protection of identity and intellectual property should be in place if the pupils upload work they create for others to see.	

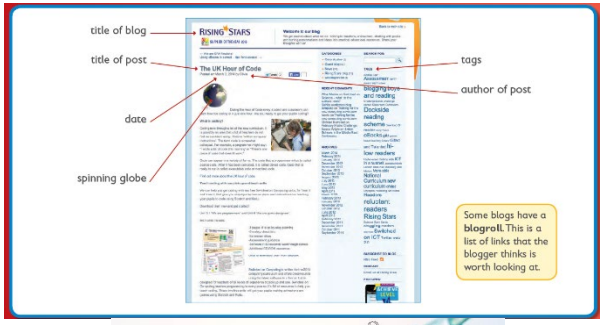
Year 5 We Are Bloggers.

Subject Specific Vocabulary	
Audience	A blog audience is the group of people who visits and returns to a blogger's site.
Blog	A regularly updated website or web page, typically one run by an individual or small group that is written in an informal or conversational style.
Blogroll	A list of hyperlinks to other blogs or websites.
Copyright	Copyright is a legal means of protecting an author's work.
Dashboard	A dashboard is a user interface that, somewhat resembling an automobile's dashboard, organizes and presents information in a way that is easy to read.
Hyperlinks	A hyperlink is a reference to data that the reader can follow by clicking or tapping.
Podcast	A digital audio file made available on the Internet for downloading to a computer or mobile device.

Unit Overview: Blogging provides a worldwide audience for pupils' work. Commenting on others' work extends pupils' sense of membership of a learning community beyond school. In this unit, pupils create a media-rich blog, comment on blogs and respond to comments.

Software and Tools

Examples of educational blogs:
www.quadblogging.com
http://100wc.net.



E- Safety

This unit provides an opportunity to discuss 'digital footprints' and what sort of information is safe to post beyond the school community.
The class should also be briefed on how to respond appropriately to others' posts.

Sticky Knowledge about Sharing experiences and opinions.

- I can use blogs safely and responsibly.
- I can see that the internet makes blogging possible. I can write a blog post.
- I can comment on a blog post.
- I can add an image, audio or video to a blog post.
- I can see what it takes to create a good blog post.
- I can see that blog posts are stored as HTML.
- I can comment with respect on others' blog posts.
- I can let others know about blog posts or comments I am worried about.
- I can see what is acceptable and unacceptable when commenting on blog posts.
- I can add an image, audio or video I have created to a blog post.
- I can explain the difference between database-driven sites and static HTML pages.
- I can use others' work in my blog with respect and in the correct way.
- I can blog about an event as it happens.

Year 5 We Are Cryptographers.

Subject Specific Vocabulary	
Binary Code	A coding system using the binary digits 0 and 1 to represent a letter, digit, or other character in a computer or other electronic device.
Cipher	A secret or disguised way of writing a code.
Decrypt	To decode a text.
Encrypt	To conceal data by converting it into a code
Morse Code	An alphabet or code in which letters are represented by combinations of long and short light or sound signals.
Password	A password is a string of characters used to verify the identity of a user during the authentication process.
Security	Techniques for ensuring that data stored in a computer cannot be read or compromised by any individuals without authorisation.
Semaphore	The Semaphore flag signalling system is an alphabet signalling system based on the waving of a pair of hand-held flags in a particular pattern.

Unit Overview: The pupils learn more about communicating information securely through an introduction to cryptography (the science of keeping communication and information secret). They investigate early methods of communicating over distances, learn about two early ciphers, and consider what makes a secure password.

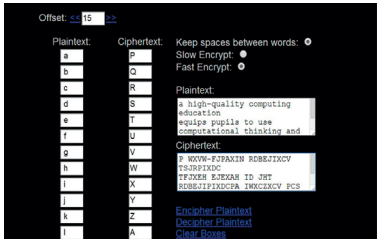
Software and Tools

Simon Singh's 'The Black Chamber':

http://www.simonsingh.net/The_Black_Chamber/chamberguide.html

Videos on cryptography:

http://simonsingh.net/media/online-videos/cryptography/



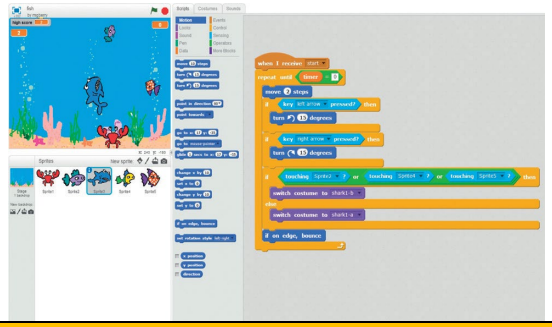
E- Safety

One of the key messages in the unit is the need for password security. The pupils should understand that they should not share passwords with anyone else.
If the pupils upload work they create for others to see, make sure precautions are in place to protect their identity, contact details and intellectual property.

Sticky Knowledge about Cracking Codes.

- I can send and receive messages in Morse code and semaphore.
- I can create and decode secret messages using the Caesar and substitution ciphers.
- I can see how important it is to keep passwords secret.
- I can see how secret code needs to be used sometimes when using the web.
- I can send and receive messages in Morse code and semaphore beyond the line-of-sight.
- I can decode a message using the Caesar cipher without knowing the letter key shift.
- I can see how important it is to create secure, hard-to-guess passwords.
- I can check to see if a web page is in secret code ('encrypted').
- I can explain how Morse code and semaphore are similar and different from the internet.
- I can explain the algorithm for the Caesar cipher.
- I can decode a message which has used a random substitution cipher.
- I can create a secure, hard-to-guess password.
- I can check the security certificates for a web page.

Year 5 We Are Game Developers.

Subject Specific Vocabulary		Software and Tools	Sticky Knowledge About Developing an Interactive Game
Algorithm	An algorithm is a clear sequence of instructions that allows a computer to solve a problem.	Snap!: http://byob.berkeley.edu. Games Angry Birds: http://chrome.angrybirds.com. Some simple Scratch games: http://scratch.mit.edu/projects/15906446 http://scratch.mit.edu/projects/15906870 http://scratch.mit.edu/projects/15907506 	• I can create a storyboard or diagram for an algorithm for my game. • I can create sound and graphics in Scratch for my game. • I can put instructions in the right order for my game. • I can find mistakes in my game. • I can create and add music for my game. • I can use selection and repetition in my game. • I can correct mistakes in my game. • I can listen to my partner's ideas about my game and make it better. • I can add instructions to my game. • I can break my game into smaller parts and work on them separately. • I can animate my characters by creating different graphics for them. • I can use variables in my game. • I can explain how my game works. • I can add comments to the script of my game.
Debugging	Debugging is checking the code in a computer program to ensure it works, and changing it if it doesn't.		
Code	Coding is putting information and commands into a program, making it possible for u to create software, apps and websites.		
Programming	The process of developing and implementing various sets of instructions to enable a computer to do a certain task		
Sprites	A bitmap graphic that is designed to be part of a larger scene. It can either be a static image or an animated graphic.		
Storyboard	A storyboard is a visual representation of how the story depicted in the movie or animation will be told.	**E- Safety**	
Unit Summary: The pupils plan their own simple computer game. They design characters and backgrounds, and create a working prototype, which they develop further based on feedback they receive.		Pupils don't need accounts to download Scratch 1.4 or Scratch 2.0, or to use Scratch 2.0 or Snap! online. If the pupils do register for accounts, they need to give a parent's or carer's email address. Once registered, the pupils can share their work with the global Scratch community in a safe online space.	