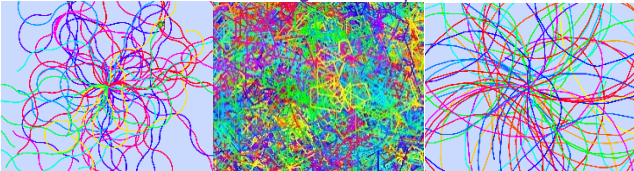




# Computing Knowledge Across the School

COMPUTING AREA	Year 3		Vocab
Computer Skills License	<p>Use It</p> <p>Draw It (2 lessons)</p> <p>Type It</p> <p>Find It</p> <p>Surf It &amp; Merge It</p> <p>Prove It</p> <p>CUPS</p>	<ul style="list-style-type: none"> <li>Children know how to turn on a PC, how to log on / off. How to find Apps in the windows menu and access resources from the desktop. Lesson 1 BBC Dance Mat</li> <li>Using Kelki.com / 3D paint - children customize themselves to using a mouse by drawing different pictures. Children develop their skills by using different tools to achieve different outcomes. Lesson 2 BBC Dance Mat Typing</li> <li>Children learn to access Word and type their name (with a capital letter). Learn how to use ENTER and SHIFT keys. Change Font, colour, and size. Double click highlights the word and dynamic ribbon appears to change style.</li> <li>Using pics4education - children navigate the website by clicking on different categories, use the logo to return to the main page. Lesson 3 Dance Mat Typing</li> <li>Children make a bookmark to pics4education, then find a picture and copy and paste it into Word. Children use drag handles to resize their image. Lesson4 BBC Typing.</li> <li>Using a template in word (already has information about an African Elephant) Children draw a picture of an elephant and import it into word, find a picture of an Elephant from Pics4learning and change the font, colour, and size of text. Challenge is to complete this independently "Prove It" with an Eagle as the topic.</li> <li>Unplugged activity using cups to learn keywords linked to coding. Children must know that symbols (code) represent an action</li> </ul>	<p>Log on, Log off, Windows button</p> <p>Left mouse click</p> <p>Left mouse click, left mouse hold.</p> <p>Brushes, colours, size, effects, download or save, copy image, select</p> <p>Font, Enter, Shift, Delete, Backspace, Colour, Carat,</p> <p>Browser, URL, link, image, select</p> <p>Bookmark, toolbar, copy, paste, mouse right click, menu, left mouse select</p> <p>Algorithm, code, debug, symbol.</p>
Code for Life	<p>I know what an algorithm is and I can express simple algorithms using symbols.</p> <p>I can design simple algorithms using loops, and selection i.e. if statements.</p> <p>I can find and correct errors i.e. debugging, in algorithms.</p> <p>I can use arithmetic operators, if statements, and loops, within programs.</p>	<p>Children need to know that precise language is needed to code. E.g., "turn" is ambiguous as it doesn't specify the angle to turn. [it should be a 90 degree turn or quarter/half turn]. "Forward" needs to specify the amount needed to move - [Forward 10]</p> <p>Blocks are "clipped" together to make an algorithm - a series of code blocks.</p> <p>Debugging means to find and correct errors.</p> <p>In Rapid Router the blocks that are incorrect and need debugging are highlighted red one the algorithm has been executed/run.</p> <p>One code block is one instruction, it does one action.</p> <p>Children have a goal - Rapid router - to get the delivery van to the house. Children must complete the algorithm with efficiency and accuracy.</p> <p>Simple coding games support each stage of learning. Consolidate each lesson with the coding games.</p> <p>Understand that a repeat is used to make the algorithm more efficient. The repeat needs "how many times" to run the code in the repeat; this number is called a variable as it can be changed by the user. Repeat is another name for a loop. Repeat "Forever" - it will never stop repeating the code.</p>	<p>algorithm</p> <p>block language</p> <p>command</p> <p>debug</p> <p>execute</p> <p>loops</p> <p>repeat</p> <p>code</p> <p>variable</p>
Turtle Art / Scratch	<p>I can create and debug an algorithm using the move, rotate and repeat commands.</p> <p>I can create and debug algorithms using pen up and pen down.</p> <p>Use PenUp / PenDown</p> <p>I can create and debug algorithms that draw shapes.</p> <p>I can create and debug algorithms that draw regular polygons</p>	<p>Children know that the blocks need to join-up like a jigsaw.</p> <p>Double clicking or using the magic wand will run their algorithm.</p> <p>Eraser clears the pen lines, dragging the blocks to the side, deletes them from their workspace.</p> <p>Different coloured blocks are grouped together in different categories.</p> <p>PU and PD "penup" and "pendown" are used to either draw on the page or move the turtle around without leaving a mark.</p> <p>Different angles are needed to create regular shapes, link to maths.</p>	<p>Blocks</p> <p>jigsaw</p> <p>pin up pen down</p> <p>clear screen</p> <p>regular shape</p> <p>left turn 90 degrees</p> <p>right turn 90 degrees</p> <p>forward backward</p> <p>centre</p>

	I can create and debug algorithms to draw patterns.	Children need to compare their outcome to others' outcomes, then debug their work correcting any mistakes. Setxy returns the turtle to a specified place. Clean = clears ink and returns to 0,0 The repeat block, under the flow option, needs a numerical value and a specific code	
<b>COMPUTING AREA</b>	<b>Year 4</b>		
SCRATCH - Quiz	I can compare quizzes and decompose a problem into smaller parts. I can write and debug a program. I can use sequence and selection. I can write and debug a programs which use sequence and repetition. I can work with variables.	Load Scratch and drag and drop blocks to make a sequence of shapes. Their code is attached to the sprite. Delete the sprite and you loose your code: Children need to know how to change a sprite's costume Children need to know how to move blocks between sprites. Scratch software has a "Block Palette, Code Area, Stage, Sprite pane." Each area does something different. Green flag + corresponding hat makes the code run. Children use a "blue" variable sensing block to ask a question and use the answer as part of the code. Children use a "green" operator blocks to combine text and user answer & use these to compare numeric values. Children use an "IF" else to check the users answer against the coders answer. Eg Question 12+3=? User puts 4... coder wanted 15 therefore the Scratch program will say incorrect. Children use a variety of blocks/combinations to show the user if they have given a correct answer: Sprite changes hue in rainbow pattern Sprite rotates, resizes, whirls, pixelates and moves	Algorithm, sequence, program block language debug execute, run code loops, repetition, repeat (10) and forever sprite, background, character if / if else
Using Images	I can draw with different shapes and lines. I can order and group objects. I can recognise an effective layout. I can combine text and images. I can lay out objects effectively. I can add and arrange photos to a movie presentation, with animation effects I can use final enhancements to turn a Movie Maker project into a finished movie file.	Using an online vector program, children create a series of shapes and lines that when organised correctly look like a "Mr Man" Skills for this include - drawing a shape, moving a shape, filling that shape with colour, changing the line colour, resizing the shape using the drag handles, create shapes, changing the shape's line properties from square to rounded, moving individual objects forwards and backwards in relation to layers and downloading the image when completed.  In Publisher the children need to develop a range of skills to produce a bookmark, poster and postcard: Adding text - changing the font, altering the size and colour Adding a shape - use the drag handles to resize and rotate, change colour of fill and line Use dynamic ribbon menu in Publisher (Layout and picture) Importing a picture from a network location - desktop Deleting objects that are no longer required. Manipulating the objects (picture, text, shape) to order them (front/back) Combining objects to create different digital artefacts like a bookmark or poster Discuss layout and colour choices and also improve their work with collaboration Save their work to network location.  In Movie Maker children create a montage of photographs in a movie show: Insert photographs from a network location Add/change transitions, pan and zoom, image effects	Vector Shape Lines Order Drag handles Properties Layers Forward Backwards  Font Text Shape Rotate Fill Line Dynamic ribbon Import Network Objects  Transition Pan and zoom timing

		<p>Use timings to change the length of time the photos are displayed</p> <p>Add music from a network location.</p> <p>Add text and comments to enhance their shows</p> <p>Remove music and photos</p> <p>Export Movies as MP4 + save the project as a Move Maker File</p>	<p>Photos</p> <p>Effects</p>
Turtle Art	<p>I can create and debug an algorithm to create a procedure.</p> <p>I can create and debug an algorithm that uses setpxy to draw shapes.</p> <p>I can create and debug an algorithm with different colours.</p> <p>I can create and debug an algorithm to fill areas with colour.</p> <p>I can create and debug an algorithm to produce text.</p> <p>I can create and debug an algorithm to draw arcs.</p>	<p>Children know that the blocks need to join-up like a jigsaw.</p> <p>Double clicking or using the magic wand will run their algorithm.</p> <p>Eraser clears the pen lines, dragging the blocks to the side, deletes them from their workspace.</p> <p>Using a random number generator, children can place their shapes in random places around the workspace. The "pink" random number generator needs a maximum and minimum number.</p> <p>Children need to move turtle to be inside a shape for the fill to work.</p> <p>Children can add to the pen colour to make a rainbow colour effect. Set pen colour to zero, every time you run an algorithm add five to the pen colour.</p> <p>Children will spend time creating noodles, random lines in patterns, they will then change the variables and this will change their pattern each time. Children need to see the effect the variables are having on their patterns.</p>  <p>Using the arc feature, the children can create simple circles. children understand the terms angle and radius to change the arc which has been drawn.</p>	<p>Blocks</p> <p>Jigsaw</p> <p>Algorithm</p> <p>Pen lines</p> <p>Clean area</p> <p>Random number</p> <p>Maximum</p> <p>Minimum</p> <p>Variable</p> <p>Fill</p> <p>Noodle</p> <p>Arc</p> <p>Effect</p> <p>Size</p> <p>Setxy</p> <p>Procedure</p> <p>Execute run</p>
COMPUTING AREA	<h2>Year 5</h2>		
Scratch - Maze	<p>I can design and program a character game.</p> <p>I can design an original character or backdrop for a game.</p> <p>I can add features or effects to enhance a game.</p> <p>I can create an original animated game with a specific goal.</p> <p>I can program costume changes for a sprite.</p> <p>I can add point-scoring and levels to game code.</p>	<p>Building on from Year 4 work...</p> <p>Children need to understand how to decompose a task. Children are shown completed maze, and the children work on different parts to create a maze.</p> <p>The children know how to create their own backdrop, and Sprite using the simple design tools available to them within scratch.</p> <p>Children need to move the Sprite around the stage using a variety of different methods, children develop a multi-algorithmic approach to achieve this.</p> <p>Children develop an understanding that different sprites can have different algorithms, combining these to create their desired outcome.</p> <p>Children use sensing blocks for a cause and effect with their algorithm. If / Else...</p> <p>Ask the children develop their complete algorithm, it will be constructed of many different parts - they would need to be tested and debug to ensure the programme is working correctly.</p> <p>Children need to add their own block, creating a new variable this will give them a scoring system.</p> <p>Children are given a completed game; they need to use their skills to change the theme and alter the variables to bespoke the game for their desired outcome.</p>	<p>algorithm</p> <p>block language</p> <p>debug</p> <p>execute</p> <p>loops</p> <p>program</p> <p>repetition</p> <p>sequence</p> <p>simulation</p> <p>sprite</p> <p>repetition</p> <p>if / if else</p> <p>variable</p> <p>backdrop</p>
Creating animation and Posting Online	<p>IALT - post media online</p> <p>IALT - understand Copyright / Create media for posting</p>	<p>Children need to know the terms, website and web pages to understand the task that we are going to complete over the five weeks.</p> <p>Children will know how to create an avatar, this will represent them online, keeping their</p>	<p>Website</p> <p>Web page</p> <p>HTML</p>

	<p>IALT - use messaging safely /create own media to post</p> <p>IALT - create media for posting / Approving Comments</p> <p>IALT - link posts</p> <p>IALT - Link and navigate posts</p>	<p>identity safe - know how to post and publish to a wordpress site. * the wordpress site is only accessible within school - all the safety risks have been taken into consideration.</p> <p>Children gain an understanding of copyright - they will know they have to make their own content.</p> <p>Children will create a stick figure animation; onion skinning, adding in between frames, clicking on key points and joints to move the figure, adding a background to create an effect, design their own figure, manipulate - resize - modify existing figures, increase the use of shortcut keys to make their work more efficient.</p> <p>Children will know to export their animation as a gif and not just save their project</p> <p>Children will post their media onto wordpress, using the correct categories to philtre the page into the right place on the website.</p> <p>Discussion around commenting and sending messages will be necessary for the children to know how to behave correctly when using these technologies online.</p> <p>Children will use their wordpress site too veiw other children's work, leave comments and manage their own comments which have been left for them.</p>	<p>Avatar</p> <p>Publish</p> <p>Post</p> <p>Online service</p> <p>Message</p> <p>Comment</p> <p>Onionskin</p> <p>Drag handle</p> <p>Resize</p> <p>Background</p> <p>Modify</p> <p>Figure</p> <p>Copyright</p> <p>Etiquette</p> <p>Animation - media</p> <p>Own content</p>
MBOT	<p>Link the Mbot to a computer and use them safely</p> <p>IALT Program the Mbot with the computer</p> <p>IALT - make the Mbot Move</p> <p>IALT - make the Mbot sense</p> <p>IALT - Design a series of routines to achieve a given goal.</p>	<p>Children will know how to use the Mbot safely; plugging them in to USB by the computer, changing their batteries, how to move around the classroom with him, not to hold them down while the motors are spinning.</p> <p>The children will use blocks to programme the Mbot, similar to scratch.</p> <p>Children will debug by uploading the programme, running the Mbot on the floor, adjusting their programme, re uploading to start the testing again.</p> <p>Children will know how to use the ultrasonic sensor, changing the variable which will correspond to the distance it is working too.</p> <p>When trying to build a police car, the children will need to decompose the task; the siren, driving round, sensing when something else is around, programming an alarm system.</p> <p>Children will develop their use of sub routines / a multi-algorithmic approach - where the children can define their own routines. E.g. A routine to play the siren.</p>	<p>Mbot</p> <p>USB</p> <p>Plug</p> <p>Port</p> <p>Battery pack</p> <p>ultrasonic sensor</p> <p>accelerometer</p> <p>subroutine</p> <p>define block (my block)</p> <p>USB lead</p>
COMPUTING AREA	<h2>Year 6</h2>		
Scratch - Animation	<p>I can create appropriate animations for a story scene.</p> <p>I can structure and control the timing of events.</p> <p>I can control when objects need to be visible.</p> <p>I can sequence events to create a story narrative.</p> <p>I can add voice sounds to enhance an animated story</p> <p>I can add interactive user features to a scene or story.</p>	<p>Building on from Year 5 work...</p> <p>Children need to move the Sprites around the stage using a variety of different methods, children develop a multi-algorithmic approach to achieve this.</p> <p>They will know how to use a repeat to make a character move including changing of costume.</p> <p>They will know how to use glide to... allowing them to choose a start and endpoint where a character will move to and from.</p> <p>Children will know how to use the broadcast, allowing them to time different events within scratch.</p> <p>Children will use hide and show to effectively make sprites appear and disappear at the right time</p>	<p>Change costume</p> <p>glide</p> <p>broadcast</p> <p>show hide</p> <p>when the Sprite is clicked</p> <p>change background to</p> <p>change costume to</p>

		<p>Children will know how to create different scenes, by changing the background and having different characters in different positions</p> <p>Children will use clickable sprites so the user can move through the different scenes.</p> <p>Children will know have to record their invoice to add narrative and extra sound effects</p> <p>The children will know how to plan their own story animation showcasing all the skills they have learnt in using scratch.</p>	
Creating Podcast and Posting Online	<p>IALT - post media online</p> <p>IALT - understand Copyright / Create media for posting</p> <p>IALT - use messaging safely /create own media to post</p> <p>IALT - create media for posting / Approving Comments</p> <p>IALT - link posts</p> <p>IALT - Link and navigate posts</p>	<p>Children need to know the terms, website and web pages to understand the task that we are going to complete over the five weeks.</p> <p>Children will know how to create an avatar, this will represent them online, keeping their identity safe - know how to post and publish to a wordpress site. * the wordpress site is only accessible within school - all the safety risks have been taken into consideration.</p> <p>Children gain an understanding of copyright - they will know they have to make their own content.</p> <p>Children will create a podcast; layering different sounds, editing, using the envelope tool, creating a second stereo part - to manipulate different sounds, adding different sound effects, recording their own voice, muting different parts, removing different parts of the track and selecting the correct music for their podcast.</p> <p>Children will know to export their sound as a Mp3 and not just save their project</p> <p>Children will post their media onto wordpress, using the correct categories to philtre the page into the right place on the website.</p> <p>Discussion around commenting and sending messages will be necessary for the children to know how to behave correctly when using these technologies online.</p> <p>Children will use their wordpress site too veiw other children's work, leave comments and manage their own comments which have been left for them.</p>	<p>Website</p> <p>Web page</p> <p>HTML</p> <p>Avatar</p> <p>Publish</p> <p>Post</p> <p>Online service</p> <p>Message</p> <p>Comment</p> <p>Envelope handle edit</p> <p>layers</p> <p>amplify</p> <p>fade in fade out</p> <p>Modify</p> <p>Figure</p> <p>Copyright</p> <p>Etiquette</p> <p>Animation - media</p> <p>Own content</p>
MBOT	<p>Link the Mbot to a computer and use them safely</p> <p>IALT Program the Mbot with the computer</p> <p>IALT - make the Mbot Move</p> <p>IALT - make the Mbot sense</p> <p>IALT - Design a series of routines to achieve a given goal.</p>	<p>Children will know how to use the Mbot safely; plugging them in to USB by the computer, changing their batteries, how to move around the classroom with him, not to hold them down while the motors are spinning.</p> <p>The children will use blocks to programme the Mbot, similar to scratch.</p> <p>Children will debug by uploading the programme, running the Mbot on the floor, adjusting their programme, re uploading to start the testing again.</p> <p>Children will know how to use the ultrasonic sensor, changing the variable which will correspond to the distance it is working too.</p> <p>When trying to build a their own outcome, the children will need to decompose the task.</p> <p>Know how to programme an iPad to turn the Mbot into a remote control car.</p> <p>Children will know how to produce the app to make the Mbot accessible to younger children</p> <p>Children will develop their use of sub routines / a multi-algorithmic approach - where the children can define their own routines. E.g., A routine to play the siren.</p>	<p>Mbot</p> <p>USB</p> <p>Plug</p> <p>Port</p> <p>Battery pack</p> <p>ultrasonic sensor</p> <p>accelerometer</p> <p>subroutine</p> <p>define block (my block)</p> <p>USB lead</p>

# Year 3

when this sprite clicked

change pen color by

change pen size by

pen down

pen up

set pen color to

size

turn  degrees

turn  degrees

clear graphic effects

think

say

think  for  secs

join

\*

=

+

answer

ask  and wait

stop all

when  clicked

repeat

forever

set instrument to

play note for  beats

play drum  for

my variable

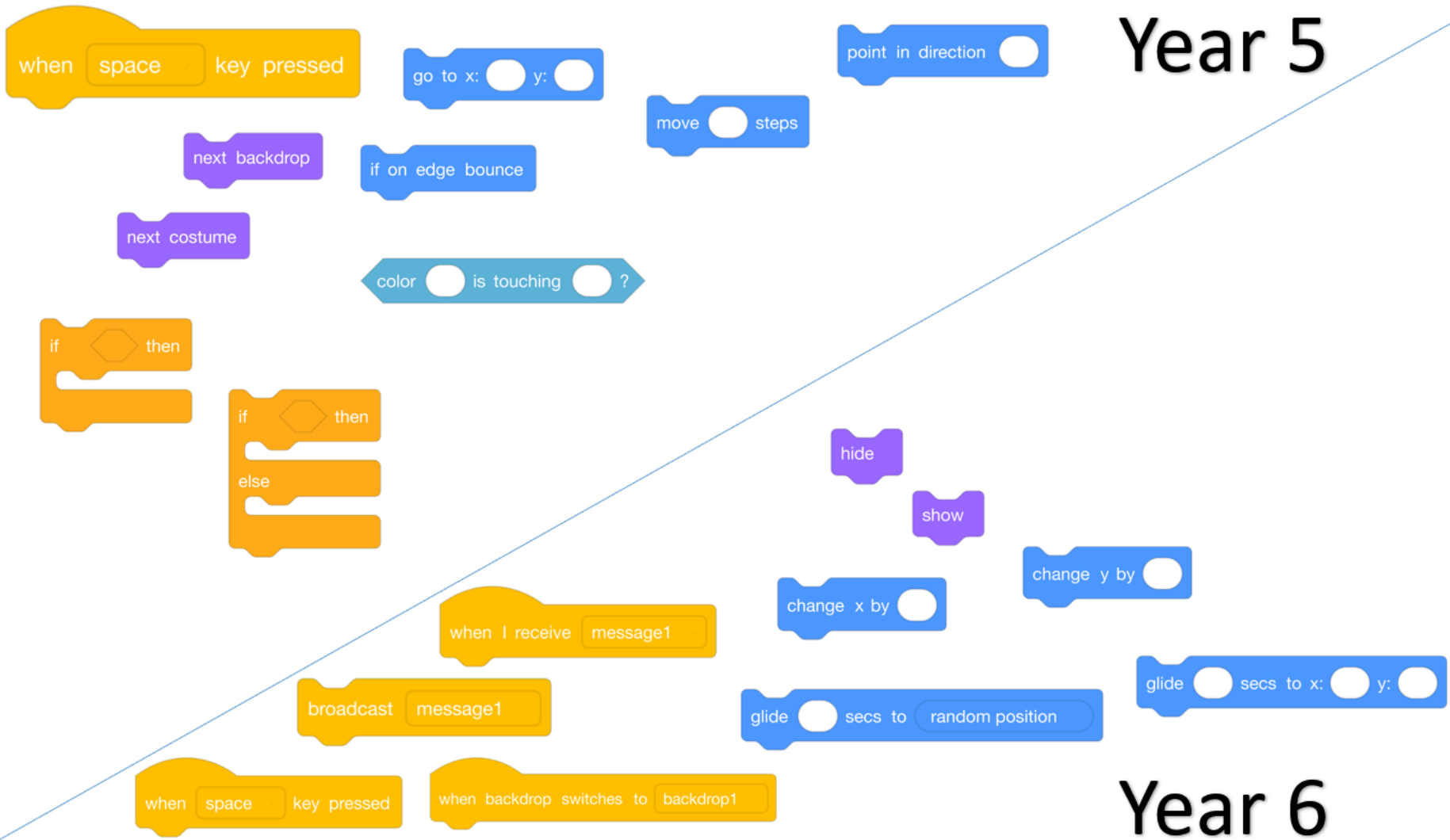
set my variable to

change my variable by

# Year 4



# Year 5



# Year 6