

These guided activities would be good preparation for learning free code: **Gorilla** – [Helicopter Swipe Game](#), [Driving Game](#), [2go](#), [Football Game](#),
 This lesson is planned as a 40 minute lesson with a 10 minute homework activity. Please adapt it to your school's requirements.

School:	Class: Year 6	Lesson: 2 of 5	Subject: Computing	Date:
Lesson Overview	Objective, LOs & SCs			Free Code Activity
In this lesson pupils will focus on creating a program that controls or simulates a physical system, i.e. changing the SPEED and ANGLE of moving OBJECTS.	<p>NC Objective: Design and write programs that accomplish specific goals, including controlling or simulating physical systems.</p> <p>Learning Outcomes:</p> <ul style="list-style-type: none"> • I can make my own computer program that does something specific using at least 3 VEHICLES. • I can use a separate TAB to organise each of my VEHICLES. • I can explain what my computer program does and how it simulates a physical system. <p>Success Criteria:</p> <ul style="list-style-type: none"> • I can explain how I used tabs to organise each of my VEHICLES. • I can explain how my program simulates a physical system. • I can describe what I did to make my VEHICLE change ANGLE. • I can show that my VEHICLES move at different SPEEDS. 			Free Code Gorilla http://www.purplemash.com/app/code/openended/fr_eecodegorilla

New Vocabulary	Link/s to other subjects	Differentiation	Assessment Opportunities	Resources Needed
Angle Action Object Speed Vehicle	Literacy – descriptive language when writing up what they did and how it worked.	Include students to be aware of and notes for support staff. SEN: to use two vehicles and to change angle of one and speed of another with support. LA: to use two vehicles and to change angle of one and speed of another. HA: as in plan. Extension Activities: could create a more developed program.	<ul style="list-style-type: none"> • Programs • Writing up of programs • Observing how ch work together 	<ul style="list-style-type: none"> • Computer/iPad per child • IWB • Internet connection • Purple Mash login for all children

Introduction (5-10mins)	Activities (25mins)	Plenary	Homework																										
<p>Today we will be creating a program that simulates a physical event. Who can guess what that means? Ch to discuss in partners for a minute. Take answers. See if anyone comes close. Explain that for our program, simulating a physical system means using ANGLES or SPEED to change the way an OBJECT moves. For example, the way someone kicks a football determines how far and how high the football will go (Football Game - Activity 3).</p> <p>All ch to have computer/laptop/iPad open in front of them. Instruct ch to log in to Purple Mash and find 2Code. Then they should scroll down and find "Free Code Gorilla". Ch put everything down. T reviews steps of how to create their programs.</p> <p>T explains that pupils' OBJECTS (what are objects? Characters, vehicles, etc.) should move at different speeds and should change angles. It can also mean different things in other contexts but, for today, we will be focusing on speed and angles.</p>	<p>Go into DESIGN MODE on IWB in FREE CODE GORILLA and drag in a VEHICLE. Double click on VEHICLE and show ch that they can change it into something else if they like but that it will retain the PROPERTIES (in LHS menu) of a VEHICLE. This is important for them to be able to use the PROPERTIES to change the SPEED and ANGLE. Explain to children that they should change their vehicles into OBJECTS that will interact with each other, for example, a footballer and a football or a girl blowing bubbles. Show children how to change the scale of their VEHICLES in the properties menu. (SCREENCAST properties)</p> <p>Exit DESIGN MODE & drag vehicle into black code box. Show pop up menu and ask ch where the ANGLE & SPEED options are.</p> <p>Introduce TABS (SCREENCAST). We are going to be using the tabs to keep our CODE organised. Create a TAB for each one of our OBJECTS and label them with the name of the OBJECT. Each time we want to make one of our characters do something, we will place it in their own TABS. Ensure all ch know what they are supposed to be doing and send to their tables. (example program)</p> <p>Children work in pairs to discuss what program they want to design and use flashcards from the OFFLINE RESOURCE PACK to help guide them in preparing their program. Children should include at least 3 VEHICLES in their program that travel at different speeds. At least one vehicle should change ANGLE. HA ch should make their VEHICLES change both angle and speed.</p> <p>Children use their 2Code workbooks to write down notes that will help them plan their programs. They must write down:</p> <ol style="list-style-type: none"> 1. What their program is about. 2. What their program should do. 3. How many VEHICLES they will include in their program. 4. What their characters will do. 5. How many steps they will need to include in their program. <p>Once children have their programs planned out, they should create it in FREE CODE GORILLA. Remind ch to use a separate tab for each vehicle and to name the tabs appropriately. If ch click on the little bug picture when they play their programs, they will be able to see the code running next to the program.</p>	<div data-bbox="1346 161 1630 564" data-label="Table"> <table border="1"> <thead> <tr> <th>Property</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>type</td> <td>vehicle</td> </tr> <tr> <td>name</td> <td>myVehicle1</td> </tr> <tr> <td>x</td> <td>7.029</td> </tr> <tr> <td>y</td> <td>6.708</td> </tr> <tr> <td>allow off screen</td> <td>No</td> </tr> <tr> <td>rotation style</td> <td>Side to side</td> </tr> <tr> <td>angle</td> <td>90</td> </tr> <tr> <td>speed</td> <td>0</td> </tr> <tr> <td>scale</td> <td>100</td> </tr> <tr> <td>image</td> <td></td> </tr> <tr> <td>friction</td> <td>0</td> </tr> <tr> <td>show/hide</td> <td>show</td> </tr> </tbody> </table> </div> <p>All children write down in their 2Code workbooks how successful they were in creating their programs in FREE CODE GORILLA after planning it in their workbooks.</p> <p>They should think about their experience in the previous lesson using free code and how much that helped them when planning in this lesson.</p> <p>T to show how to copy link of saved project and create QR link which will be printed and stuck in their workbook so they can look at them at home.</p>	Property	Value	type	vehicle	name	myVehicle1	x	7.029	y	6.708	allow off screen	No	rotation style	Side to side	angle	90	speed	0	scale	100	image		friction	0	show/hide	show	<p>Spend 10 mins creating a free code GORILLA program using commands they reviewed in the lesson. (MA)</p> <p>Design and create a new story/program using commands/objects they haven't yet used. (HA)</p> <p>Publish and print QR code to take in to school.</p>
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