

# Introduction to Scratch: sprites, scripts, and loops

In this project path, coders will learn the basics of Scratch — a simple block coding language. Each project can be completed within an hour, and you don't need any prior coding knowledge. You can find all these projects [here](#).

Projects in this path are divided into three types, based on the style of learning: **Explore**, where coders learn how to use new Scratch blocks; **design**, where they practice the skills they have learned; and **invent**, where they use their skills to develop their own ideas.

## Key resources and tips

- At the start of the session make sure coders open the starter project link in each set of instructions, rather than using a new Scratch project. This will make sure they have all the sprites and costumes they need.
- You can find quick definitions, examples and details of how to set up Scratch in our [Getting started with Scratch guide](#).
- For more information on key programming terms and concepts, try our FutureLearn course [Teaching programming to 5-11 year olds](#).

Project type	Project name	Description and notes	Learning outcomes
Explore	<a href="#">Space talk</a> 	Use Scratch to give sprites an 'emote' so that they communicate when clicked: <ul style="list-style-type: none"> <li>• This project introduces coders to the Scratch coding language.</li> <li>• Coders will work through step-by-step instructions to code characters <b>Pico</b>, <b>Nano</b> and <b>Giga</b>.</li> <li>• Using their new skills they can code the character <b>Tera</b> in their own style.</li> </ul>	<ul style="list-style-type: none"> <li>• Add <a href="#">sprites</a> and a backdrop to project</li> <li>• Click on sprites to make them communicate using <a href="#">Looks</a> and <a href="#">Sound</a> code blocks</li> <li>• Use the <a href="#">Paint editor</a> to change a costume</li> </ul>
Explore	<a href="#">Catch the bus</a> 	Code sprites to walk or fly to the bus before it drives off: <ul style="list-style-type: none"> <li>• This project introduces coders to making animations with just a few new coding elements.</li> <li>• Coders can use humour to choose whether characters will miss the bus or make it in time.</li> <li>• Projects can be upgraded by adding more characters.</li> </ul>	<ul style="list-style-type: none"> <li>• Animate each sprite <a href="#">when the flag is clicked</a>.</li> <li>• Position sprites on the <a href="#">Stage</a>.</li> <li>• Use a <a href="#">repeat loop</a> to move sprites and switch costumes</li> </ul>

<p><b>Explore</b></p>	<p><a href="#">Find the bug</a></p> 	<p>Create a game in which you have to find a hidden bug on each level:</p> <ul style="list-style-type: none"> <li>• In this project, coders create their first game with Scratch.</li> <li>• Coders can play their game and those created by other club members, then make changes based on their experience.</li> <li>• Coders can play games created by the wider Code Club community in this <a href="#">Find the bug Scratch studio</a>.</li> </ul>	<ul style="list-style-type: none"> <li>• Create levels for your game using <a href="#">next backdrop</a> and <a href="#">when backdrop switches</a> to blocks.</li> <li>• Use a <a href="#">forever loop</a> to keep running code blocks.</li> <li>• Use the timer to let the player know how they did</li> </ul>
<p><b>Design</b></p>	<p><a href="#">Silly eyes</a></p> 	<p>Create your own app with a character whose eyes follow the mouse pointer:</p> <ul style="list-style-type: none"> <li>• In this project, coders will make many design choices.</li> <li>• The embedded projects in the Introduction step provide inspiration.</li> <li>• Coders can get even more inspiration from the Code Club community in this <a href="#">Silly eyes Scratch studio</a>.</li> </ul>	<ul style="list-style-type: none"> <li>• Make a project with user interaction</li> <li>• Design the looks and features of your app and write code to build your ideas.</li> <li>• Use tips to debug your project.</li> </ul>
<p><b>Design</b></p>	<p><a href="#">Surprise! animation</a></p> 	<p>Create an animation of a story with a surprise:</p> <ul style="list-style-type: none"> <li>• Coders will spend time planning their animation thinking about it in four parts; the setup, curiosity, a surprise and a reaction.</li> <li>• Coders can get inspiration from the Code Club community in this <a href="#">Surprise animation Scratch studio</a></li> </ul>	<ul style="list-style-type: none"> <li>• Use Scratch to create an animation</li> <li>• Use decomposition to break an animation into parts and build it one part at a time.</li> <li>• Test and debug your code when you make changes.</li> </ul>
<p><b>Invent</b></p>	<p><a href="#">I made you a book</a></p> 	<p>Create a book with multiple pages to tell a story or share facts:</p> <ul style="list-style-type: none"> <li>• In this project coders will use the skills built in this path of projects to create a book that meets a project brief.</li> <li>• Coders will think about the audience they're writing for, as well as deciding the topic and features of their book.</li> <li>• Coders can get inspiration from the Code Club community in this <a href="#">I made you a book Scratch studio</a>.</li> </ul>	<ul style="list-style-type: none"> <li>• Think of original ideas to plan, design and build a digital book for someone.</li> <li>• Choose which skills to use to build your idea.</li> <li>• Share your project and open it with a web address</li> </ul>