



Summer countdown

Code Playground

May 2023



Introduction to EduBlocks

EduBlocks is a free tool that helps anyone learn how to code with text-based languages like Python or HTML, using familiar block coding as used in Scratch.

This session will allow you to use blocks to create a summer holiday countdown timer and see what block coding looks like in HTML coding language.

The project is designed for EduBlocks 4.0 and will show you the code you need to build a basic countdown timer with different text sizes and colours and show how to add images and script using HTML.

All you need to get started is an internet browser and access to [EduBlocks.org](https://www.edublocks.org)

Summer countdown timer



Time until school's out for summer!

15:30pm July 21st 2023

114d 22h 45m 12s

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Step 1

HTML code is made from different tags, which define the different sections and areas of the webpage and is how a web browser will read and understand the code.

Most tags in HTML will need opening and closing.

To start the code, we need a HTML opening tag.

<html>

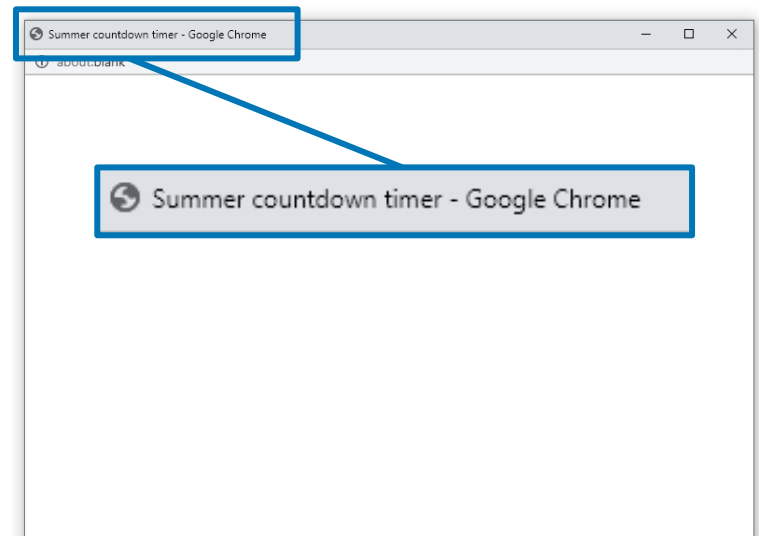
To end the code, we need a HTML closing tag.

</html>

All the code we add from now, will be placed inside of these opening and closing HTML tags.

We'll start by adding a title block, which will name our webpage. Type in **Summer countdown timer**.

```
<html>
  <title> Summer countdown timer </title>
</html>
```



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Step 2

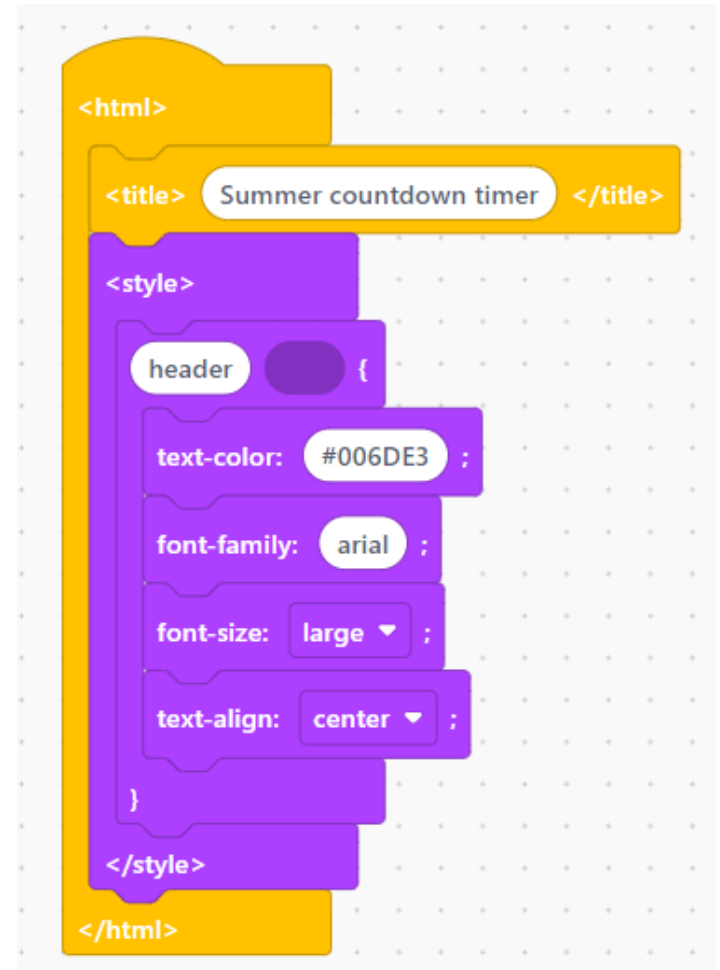
The next section of code will allow us to set up the heading text colour, font, and position for the text we'll use in our heading. Start by adding a style tag block, and then add blocks to code the heading, which we've called header.

A colour hex code is a way to represent a colour in RGB format by combining three values; the amounts of red, green and blue in a particular shade of colour. In HTML, a colour can be specified using a hexadecimal value in the form #rrggbb.

For example, #ff0000 is displayed as red, because red is set to its highest value (ff), and the other two (green and blue) are set to 00.

In the text colour block, we've added the colour hex code **#006DE3** which is a blue colour.

We've then set the font for our text as **arial**, the size to **large**, and positioned the text to align to the **centre** of the screen.



```
<html>
<title> Summer countdown timer </title>
<style>
header {
text-color: #006DE3 ;
font-family: arial ;
font-size: large ;
text-align: center ;
}
</style>
</html>
```

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Step 3

Now we've coded the heading, we'll move on to the code to set up the text colours and font for the body and paragraphs of our countdown timer.

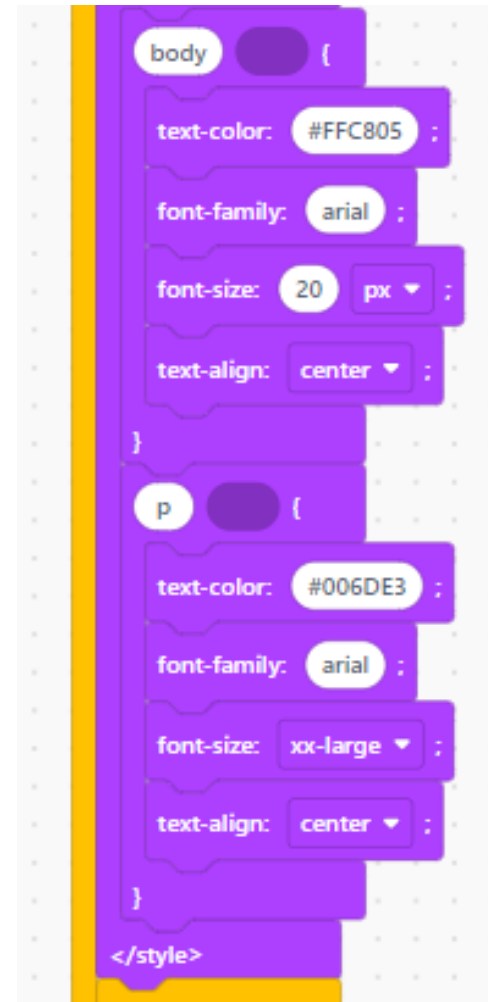
Within the style tag from step 2, add a block to code the body of text and call that **body**.

Change the text colour to the colour hex code **#FFC805** which will change this text colour to blue, change the font to **arial**, the font size to **20px** and align to **centre**.

Repeat using the same blocks to code the paragraph settings, and label this section of code **p** (for paragraph).

Change the text colour to the colour hex code **#006DE3** which is yellow and change the font to **arial**, the font size to **xx-large** and align to **centre**.

We've now set up the parameters for the remaining text in our countdown timer.



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Step 4

The next step is to add some text and an image to the body of our timer. Add a **<body>** tag block and then add a **<header>** tag block to code the heading title text and image.

The **
** block tag is used for a line break, to add a gap in our paragraph body. This is an empty tag, so there's no need to add the end tag **</br>**.

In HTML, the **<h1>** tag sets the size of the text to the largest size, usually used for headings. The h sizes can range from h1 (largest) to h6 (smallest). Add the header text **Summer countdown timer**

To add our first image, copy and paste the full picture link from the [Resources](#) section into the **<img src=** block and adjust the height to **200** pixels. You should now be able to see the countdown title and image.

A screenshot of a code editor interface showing a sequence of HTML code blocks. The blocks are arranged in a vertical stack, with each subsequent block indented further to the right. The blocks are: a yellow block for the opening <body> tag, an orange block for the opening <header> tag, a blue block for the
 tag, a blue block for the <h1> tag with the text 'Summer countdown timer', a pink block for the <img src= tag with the URL 'https://barclayscodeplayground.co.uk/content/dam/barclayscodeplayground-co-uk/images/thumbnails-2023/summer_countdown_16_9.jpg' and a height attribute set to '200', an orange block for the closing </header> tag, and a blue block for the
 tag. The background of the editor is a light gray grid.

```
<body>  
  <header>  
    <br>  
    <h1> Summer countdown timer </h1>  
      
  </header>  
  <br>
```

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Step 5

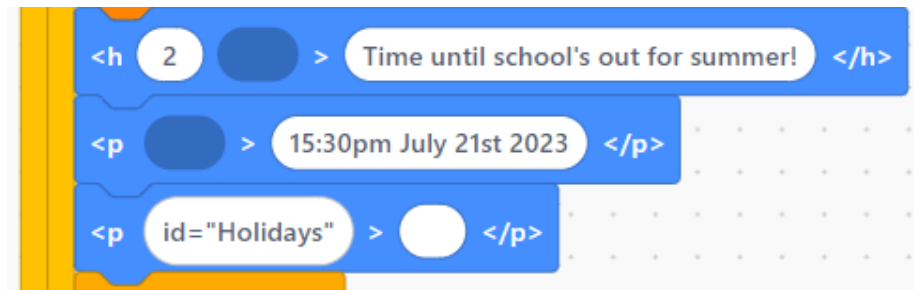
The next step is to add the final text to the body of our countdown timer. Add a **body** tag block and then add blocks to code the heading title text and image.

We can add text blocks to start adding text to our page. Type **Time until school's out for summer!** into the blank space. In HTML the `<h1>` tag sets the size of the text to the largest size, usually used for headings. The h sizes can range from h1 (largest) to h6 (smallest). For this text we'll use heading size `<h2>` and the text colour (blue) will display in the body code we coded in step 4.

The first `<p>` tag block text will use the body code we used in step 4. Type **15:30pm July 21st 2023** (or the date and time your school breaks up for the summer) into the blank space. You should now see the title, our picture and the body and paragraph of text.

In the final `<p>` tag block, type **id= "Holidays"**

This piece of code is required to display our final section of code, which is the countdown timer itself.



```
<h2 > Time until school's out for summer! </h2>  
<p > 15:30pm July 21st 2023 </p>  
<p id="Holidays" > </p>
```

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Step 6

The final step is to add the countdown timer variables in a **<script>** block for the countdown timer to know when to start and finish. We'll code this using JavaScript, which allows you to make web pages interactive. For ease, this code can be copied from the [Resources](#) page. Our JavaScript timer code is explained over the next few pages.

First, we set the date we're counting down to (Jul 21, 2023 15:30:00 in our example) from the current time, then update the countdown every second and find the distance between now and the timer end date.

Set the date we're counting down to

```
var countdownDate = new Date("Jan 5, 2024  
15:37:25").getTime();
```

Update the count down every 1 second

```
var x = setInterval(function() {
```

Get today's date and time

```
var now = new Date().getTime();
```

```
<script>  
var deadline = new Date("Jul 21, 2023 15:30:00").getTime();  
var x = setInterval(function() {  
var now = new Date().getTime();  
var t = deadline - now;  
var days = Math.floor(t / (1000 * 60 * 60 * 24));  
var hours = Math.floor((t % (1000 * 60 * 60 * 24)) / (1000 * 60 * 60));  
var minutes = Math.floor((t % (1000 * 60 * 60)) / (1000 * 60));  
var seconds = Math.floor((t % (1000 * 60)) / 1000);  
document.getElementById("Holidays").innerHTML = days + "d "  
+ hours + "h " + minutes + "m " + seconds + "s ";  
if (t < 0) {  
clearInterval(x);  
document.getElementById("Holidays").innerHTML = "School's out for summer!";  
}  
}, 1000);  
</script>  
</body>  
</html>
```

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Step 7

Next, code the distance between now and the timer end date.

Find the distance between now and the timer end date

```
var distance = countdownDate - now;
```

We calculate the time difference (in milliseconds) between our current date and end date. Once this difference has been found, we convert the milliseconds into days, hours, minutes, and seconds.

Time calculations for days, hours, minutes and seconds

```
var days = Math.floor(distance / (1000 * 60 * 60 * 24));
```

```
var hours = Math.floor((distance % (1000 * 60 * 60 * 24)) / (1000 * 60 * 60));
```

```
var minutes = Math.floor((distance % (1000 * 60 * 60)) / (1000 * 60));
```

```
var seconds = Math.floor((distance % (1000 * 60)) / 1000);
```

```
<script>
var deadline = new Date("Jul 21, 2023 15:30:00").getTime();
var x = setInterval(function() {
var now = new Date().getTime();
var t = deadline - now;
var days = Math.floor(t / (1000 * 60 * 60 * 24));
var hours = Math.floor((t % (1000 * 60 * 60 * 24)) / (1000 * 60 * 60));
var minutes = Math.floor((t % (1000 * 60 * 60)) / (1000 * 60));
var seconds = Math.floor((t % (1000 * 60)) / 1000);
document.getElementById("Holidays").innerHTML = days + "d "
+ hours + "h " + minutes + "m " + seconds + "s ";
if (t < 0) {
clearInterval(x);
document.getElementById("Holidays").innerHTML = "School's out for summer!";
}
}, 1000);
</script>
</body>
</html>
```

Step 8

The results are then displayed, linked to the final `<p` tag block, `id= "Holidays"` we coded in step 5.

Display the result in the element with `id="Holidays"`

```
document.getElementById("demo").innerHTML = days + "d " +
hours + "h "
+ minutes + "m " + seconds + "s";
```

Finally, once the countdown timer has counted down past July 21, 2023 15:30:00 the message "School's out for summer" will replace it.

If the count down is finished, write some text

```
if (distance < 0) {
  clearInterval(x);
  document.getElementById("demo").innerHTML = "School's
out for summer!";
}
}, 1000);
```

If you'd like to test this, enter the date and time a minute ahead of now in the first line of code.

```
<script>
var deadline = new Date("Jul 21, 2023 15:30:00").getTime();
var x = setInterval(function() {
var now = new Date().getTime();
var t = deadline - now;
var days = Math.floor(t / (1000 * 60 * 60 * 24));
var hours = Math.floor((t%(1000 * 60 * 60 * 24))/(1000 * 60 * 60));
var minutes = Math.floor((t % (1000 * 60 * 60)) / (1000 * 60));
var seconds = Math.floor((t % (1000 * 60)) / 1000);
document.getElementById("Holidays").innerHTML = days + "d "
+ hours + "h " + minutes + "m " + seconds + "s ";
  if (t < 0) {
    clearInterval(x);
    document.getElementById("Holidays").innerHTML = "School's out for summer!";
  }
}, 1000);
</script>
</body>
</html>
```

Resources

Picture link:

https://barclayscodeplayground.co.uk/content/dam/barclayscodeplayground-co-uk/images/thumbnails-2023/summer_countdown_16_9.jpg

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Countdown timer code:

```
var deadline = new Date("Jul 21, 2023 15:30:00").getTime();
var x = setInterval(function() {
var now = new Date().getTime();
var t = deadline - now;
var days = Math.floor(t / (1000 * 60 * 60 * 24));
var hours = Math.floor((t%(1000 * 60 * 60 * 24))/(1000 * 60 * 60));
var minutes = Math.floor((t % (1000 * 60 * 60)) / (1000 * 60));
var seconds = Math.floor((t % (1000 * 60)) / 1000);
document.getElementById("Holidays").innerHTML = days + "d "
+ hours + "h " + minutes + "m " + seconds + "s";
    if (t < 0) {
        clearInterval(x);
        document.getElementById("Holidays").innerHTML = "School's out for summer!";
    }
}, 1000);
```

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