

Creating a Coding Course for Kids

Deborah Owen

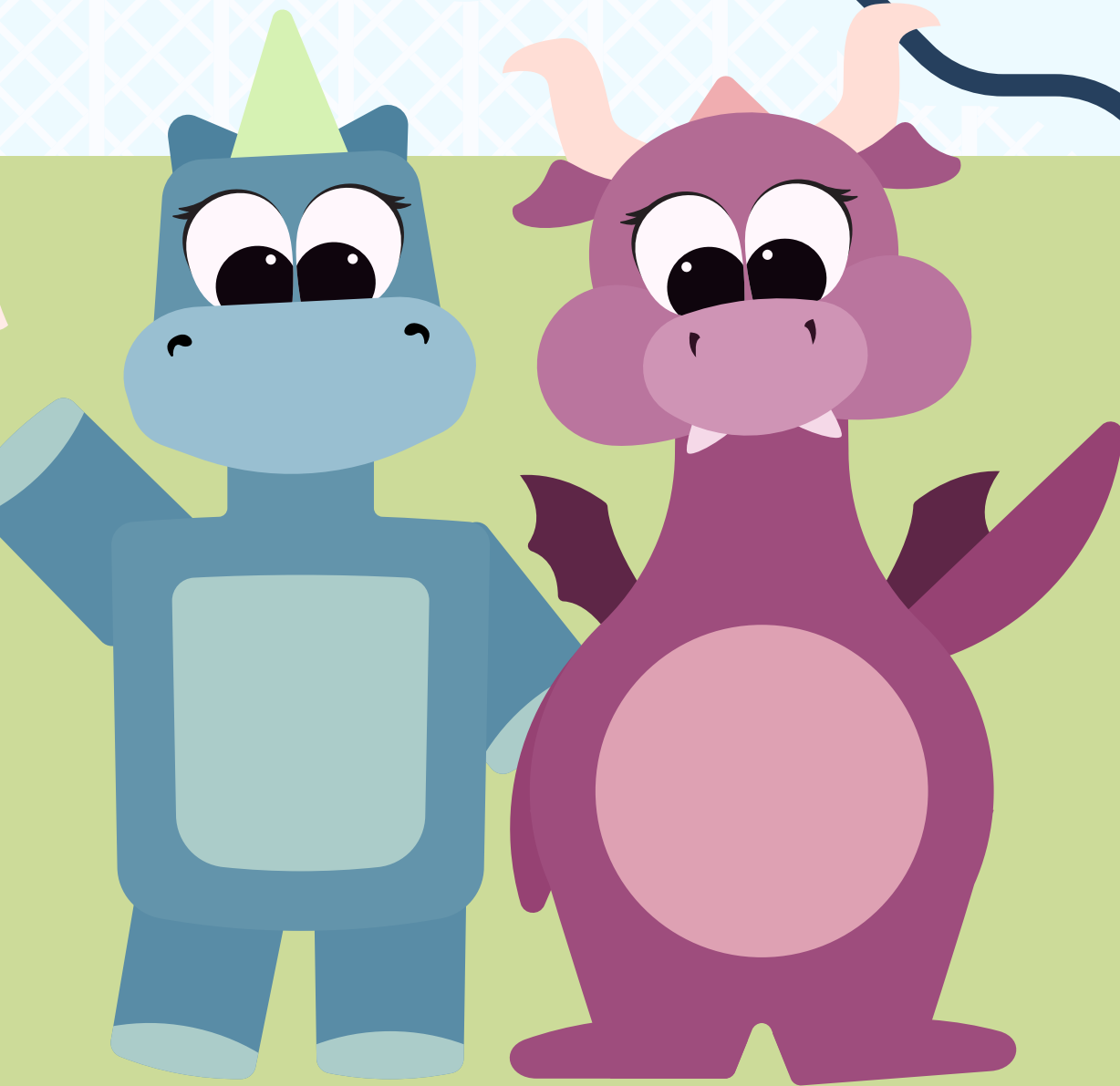
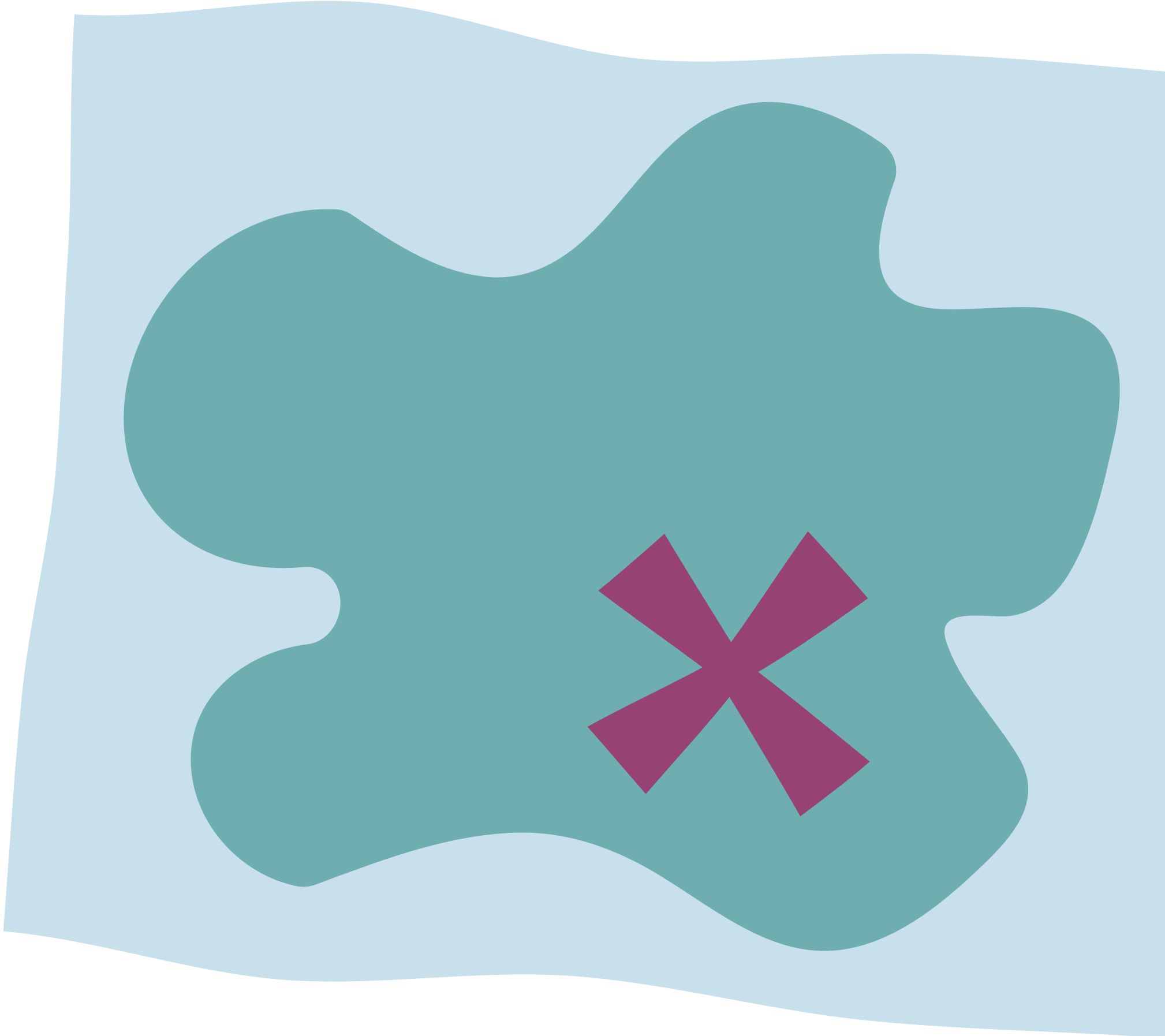
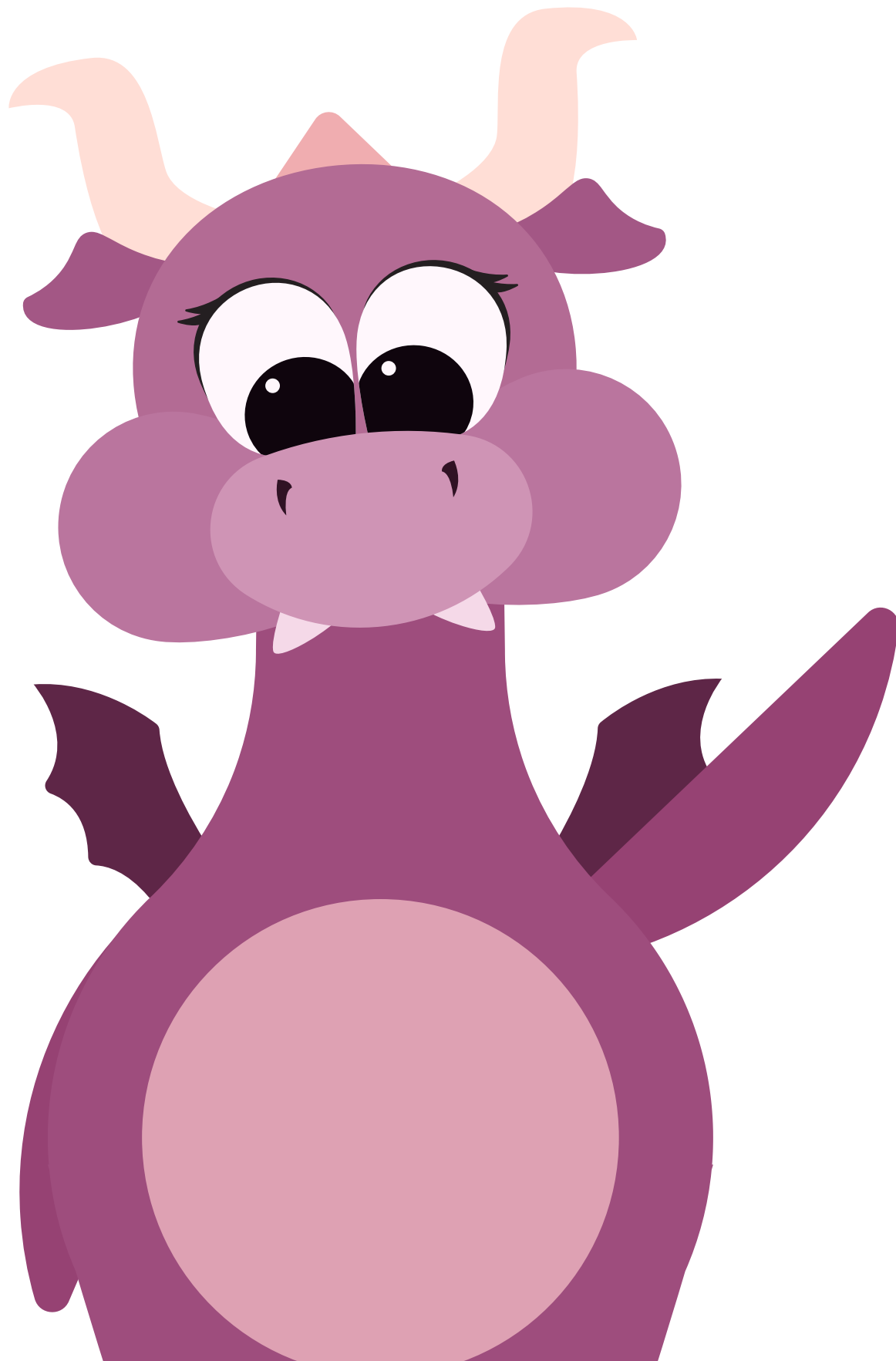


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The Premise

When I was nine years old, I wanted to learn how to build a website. So I got to work googling and practicing, teaching myself HTML and CSS. I made websites about all my favorite things – American Girl Dolls and Harry Potter and Hannah Montana – and dreamed of someday launching a real website.

15 years later, I'm living the dream. The bulk of my work experience is in web design and content creation. Building an extensive knowledge of HTML and CSS has given me a leg-up and opened new doors of opportunity for me.

Web development has come a long way in 15 years. 15 years down the road who knows what incredible things the kids of today will be doing. I wouldn't be where I am today if I hadn't explored the things I was curious about as a kid. So I wanted to create a way to pay it forward.

Back in 2007, interesting resources for learning how to code were sparse. As I started scoping out this project, I was curious to see if much had changed.

While there are so many more resources out there now, there are still so few targeted at kids. And those that are don't look very exciting. These sites are generic and usually targeted at middle school boys.

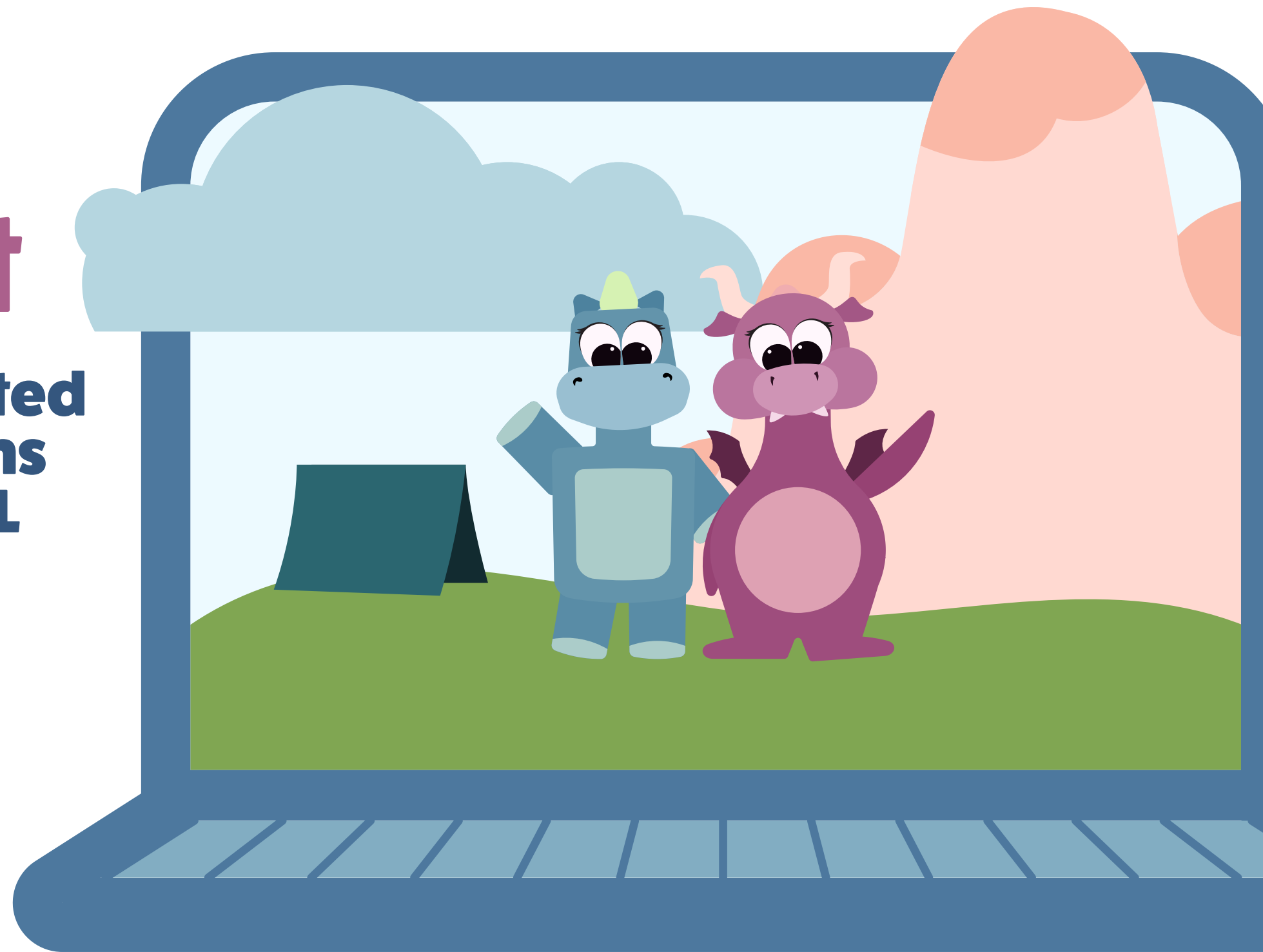
This is cutting out a huge market with so much potential. If these principles are taught in a simple and appealing way, girls and boys at a young age can start learning, grasping, and exploring.

The Concept

A web-based course, targeted at kids, that uses illustrations and activities to teach HTML

The Setting

A modern fantasyland with unicorns and dragons



Branding

The Logo

<web coding>
AdventureLand

The Audience

- girls and boys
- ages 8-10
- interested in design or programming

The Typography

I chose a playful, bold heading font and paired it with a thin, easy-to-read body copy font for legibility.

Headings

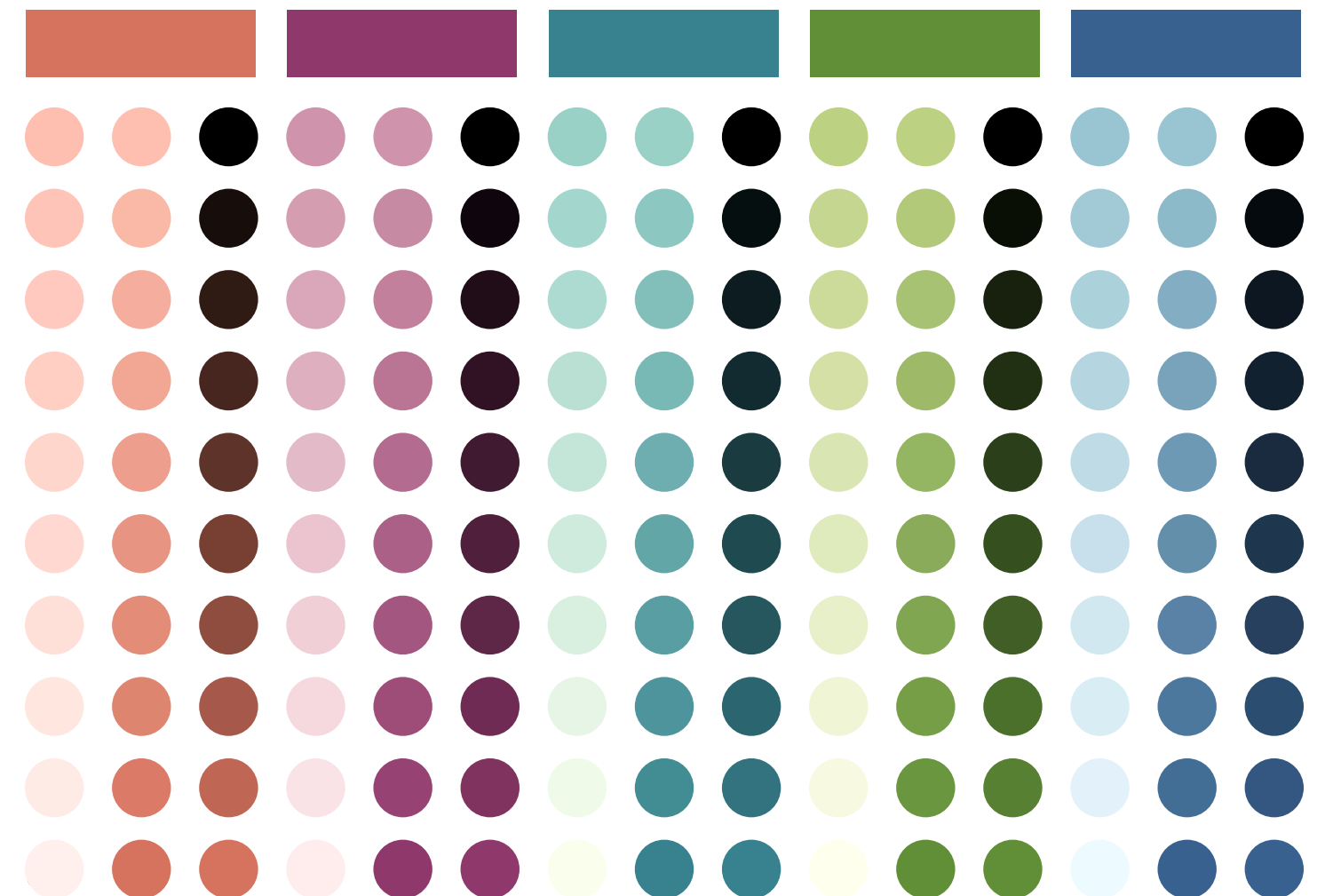
FatFrank Heavy, 48pt

Body Copy

Omnes Regular, 22pt

The Color System

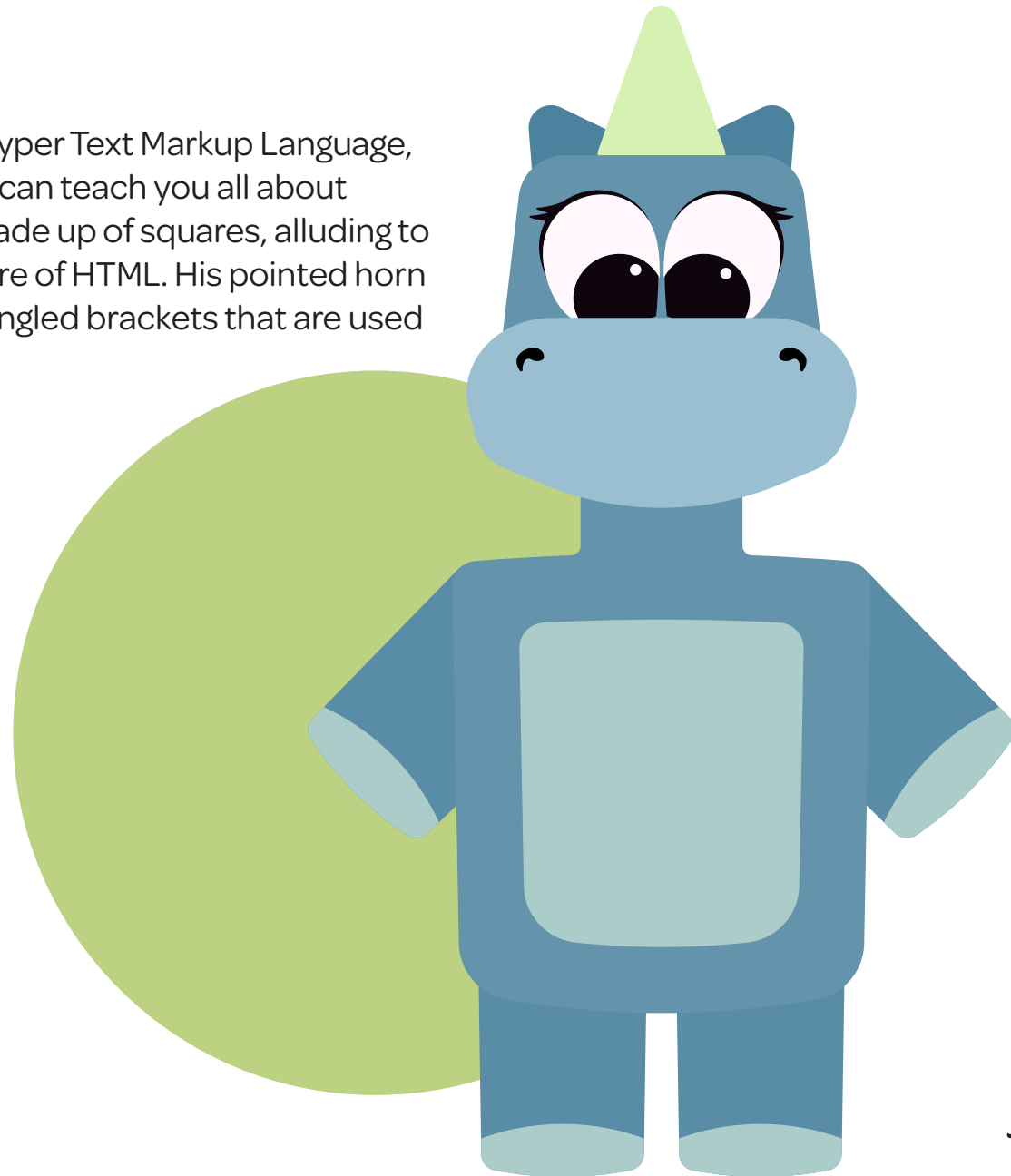
I developed a color system that was implemented throughout all the illustrations in the course using 5 hues in varying tints and shades.



Characters

Mark

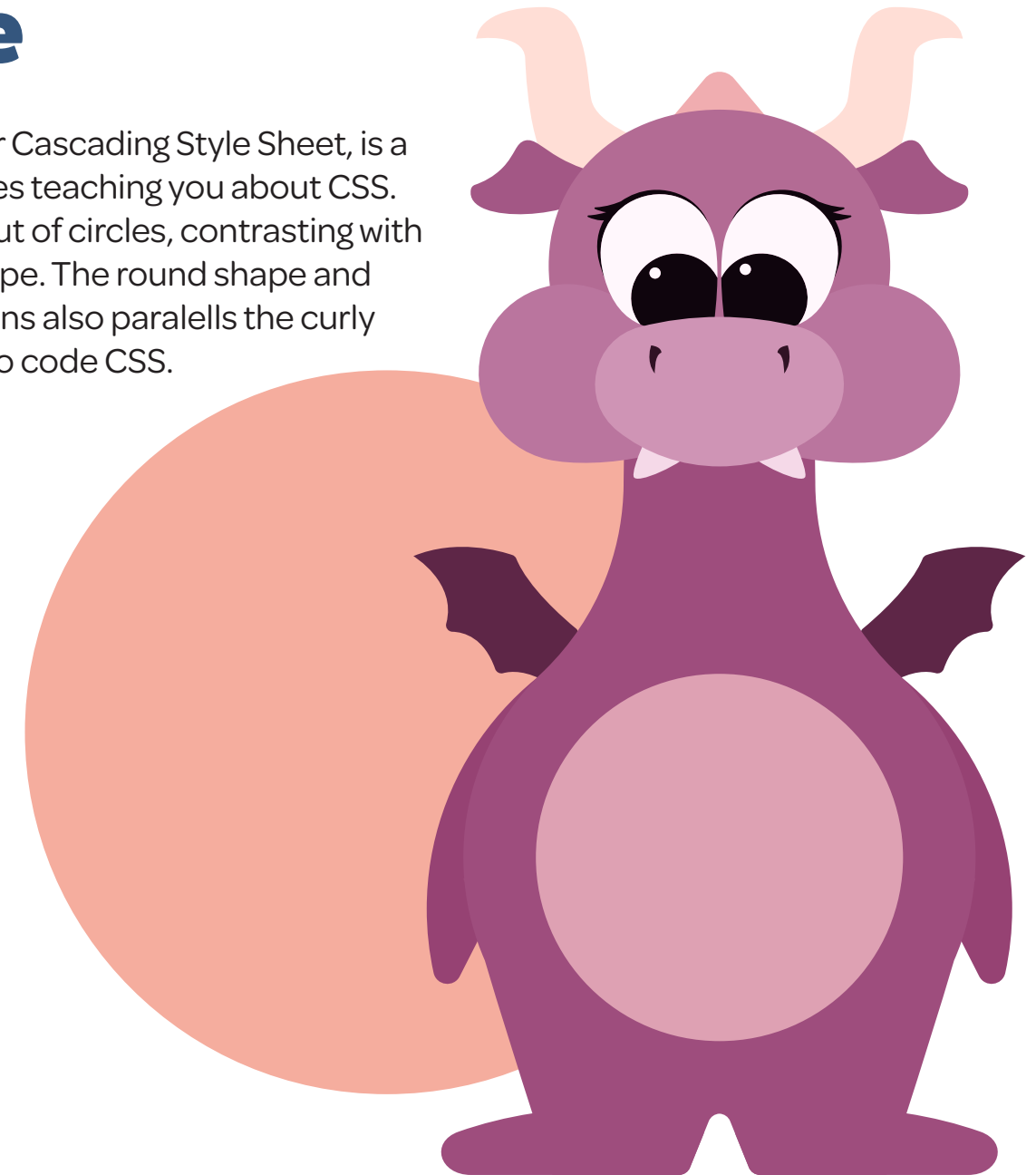
Mark, short for Hyper Text Markup Language, is a unicorn who can teach you all about HTML. Mark is made up of squares, alluding to the boxy structure of HTML. His pointed horn represents the angled brackets that are used in HTML coding.



10

Cassie

Cassie, short for Cascading Style Sheet, is a dragon who loves teaching you about CSS. Cassie is built out of circles, contrasting with Mark's boxy shape. The round shape and curve of the horns also parallels the curly brackets used to code CSS.



11

Lessons

HTML

- HTML and CSS
- How HTML Works
- Head and Body
- Structural Tags
- Text Block Styles
- Inline Text Styling
- Anchors and Links
- Images
- Lists
- Nesting and Indenting

I wrote a series of 10 lessons introducing the basics of HTML. These lessons relied on analogies as the framework for teaching each new concept.

Creating these lessons was challenging, but those challenges ultimately led to a more rewarding project.

Writing to a young audience proved much harder than it sounded. I needed to explain concepts that have become second nature to me.

This meant I needed to continually check that the material made sense to people unfamiliar with coding. I was also conscious of the vocabulary I used, making sure it was clear, concise, and consistent.

I also needed to develop out my analogies, this time making sure they both accurately reflect the coding principles and are accessible to new visitors.

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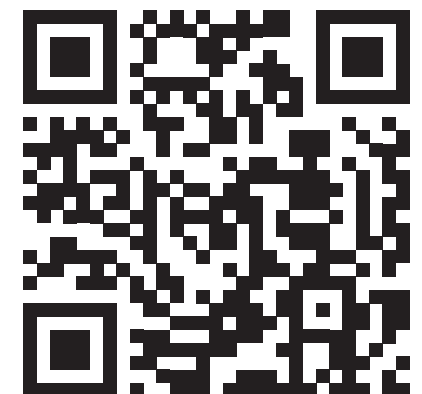
CSS

- How CSS Works
- Classes and IDs
- Colors
- Fonts
- Borders and Corners
- Margins and Padding
- Advanced Selectors
- Cascading

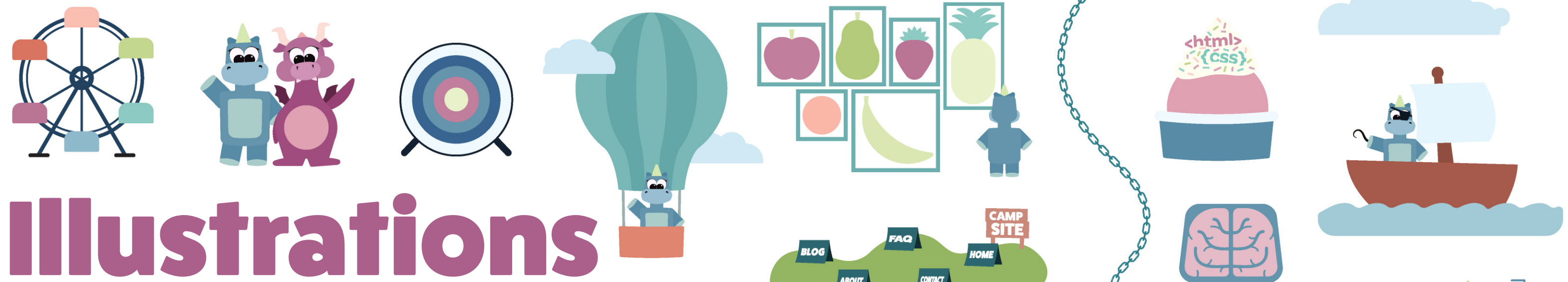
I wrote 8 additional lessons introducing CSS. These lessons built on the material from the HTML lessons, and followed a similar structure.

As I wrote each lesson for both HTML and CSS, I made plans for which visuals to pair with each content section. I wanted each lesson to have a different place setting, so it would feel like a user is going from one place to the next.

All written lessons can be found at web.deborahjulene.com



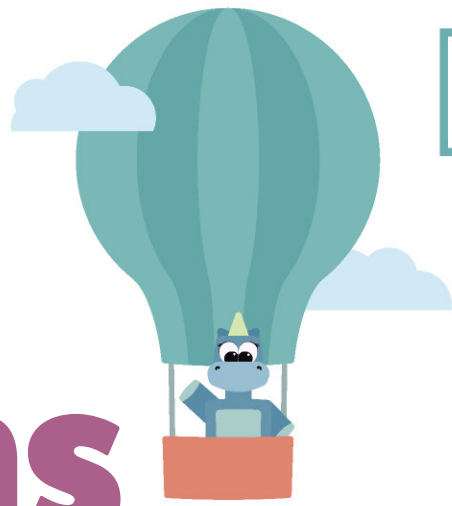
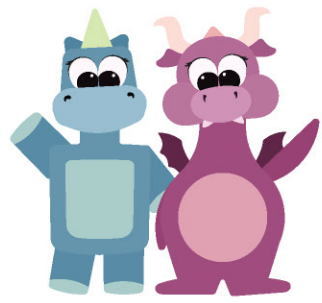
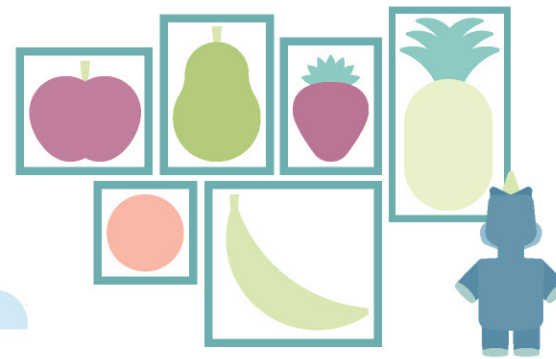
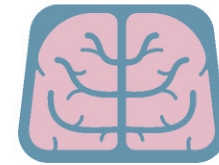
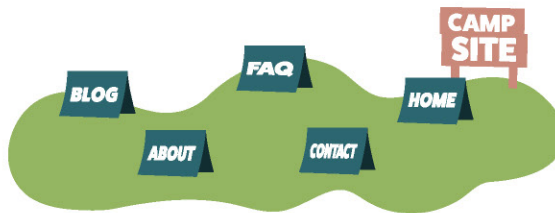
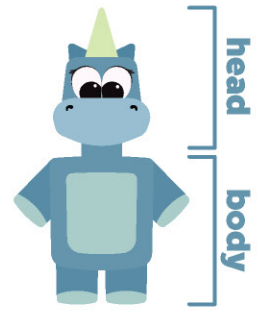
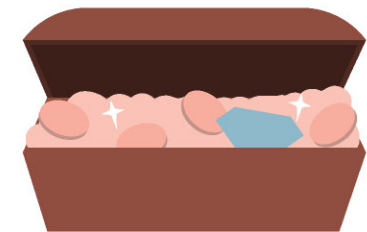
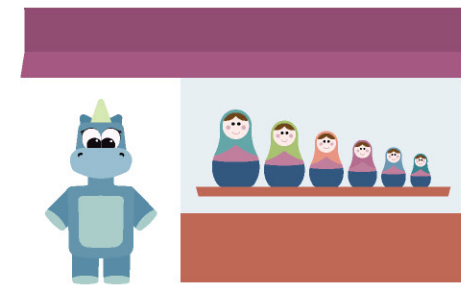
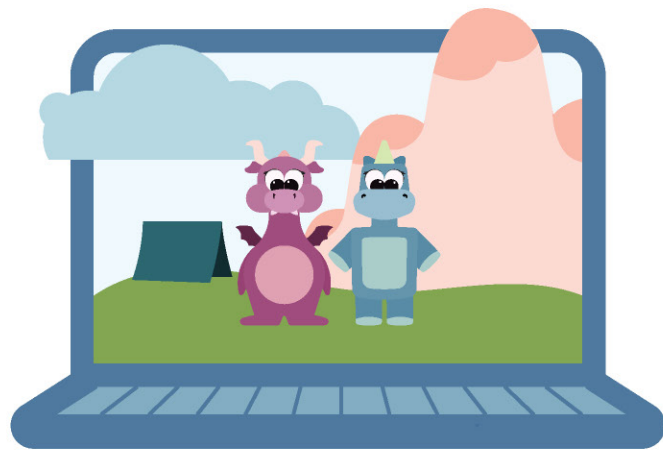
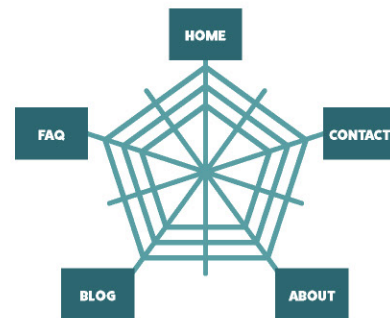
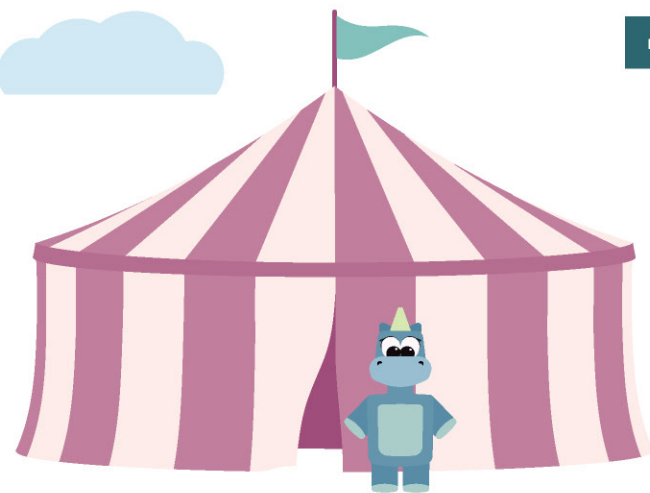
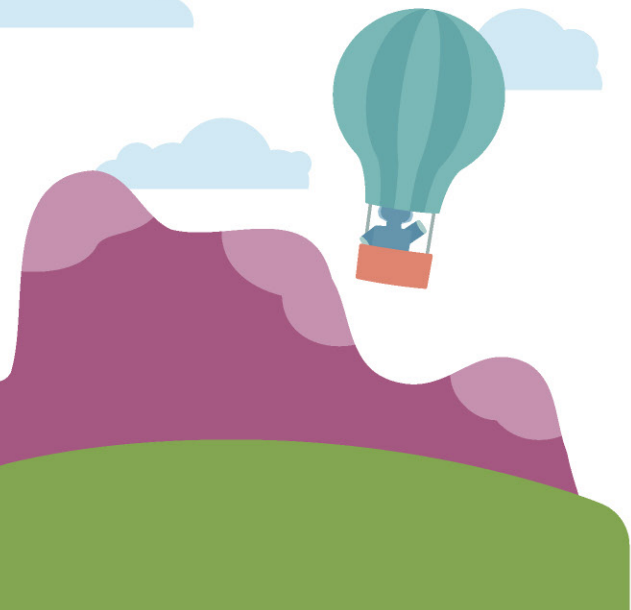
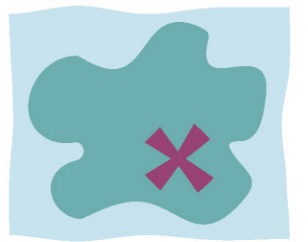
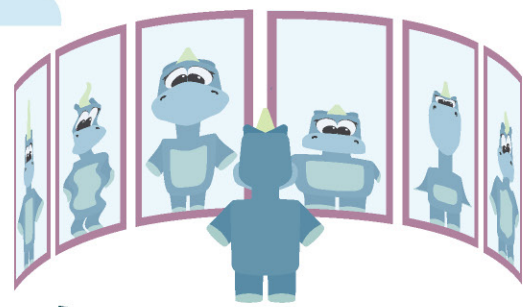
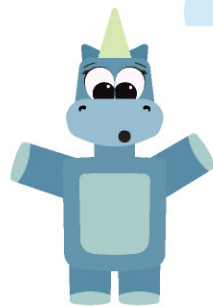
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Illustrations

This project relied heavily on illustrations to help visualize each coding principle. While writing each lesson I created a detailed plan for every illustration I would need.

I created illustrations for each of the 10 HTML lessons, and the first CSS lesson. These include over 20 unique illustrated assets, with additional compositions which incorporate or combine existing assets.



Coding Activities

Students learn by doing, so incorporating hands-on activities was a must. Alongside each lesson, I created a simple coding activity that would allow a student to practice the code they learned within the lesson.

Sometimes the lesson material led to creating an activity concept. Other times, the activity idea came first, and the lesson was built around the activity. In all cases I attempted to closely connect the two.

In total, I created 11 coding activities, and drafted detailed concept outlines of the remaining 7 activities.

Split	HTML	CSS	Output
	<pre>1 <div class="ticket"> 2 <img src="https://web.deborahjulene.com 3 <h1>Ticket to Adventure</h1> 4 <h2>Deborah</h2> 5 </div></pre>	<pre>1 div.ticket { 2 background-color: lightblue; 3 color: white; 4 border: 5px #fff dashed; 5 } 6 7 img{ 8 width: 200px; 9 margin: auto; 10 } 11 12 h1{ 13 font-family: FatFrank Heavy, Aria</pre>	

Split	HTML	CSS	Output
	<pre>1 <p>content/uploads/2022/03/8-art-1.png"> 2 <p>content/uploads/2022/03/8-art-3.png"> 3 <p>content/uploads/2022/03/8-art-2.png"></pre>	<pre>1 img { height: 200px; width: auto; borde</pre>	

Split	HTML	CSS	Output
	<pre>1 <h1>Heading One</h1> 2 <h2>Heading Two</h2> 3 <h3>Heading Three</h3> 4 <h4>Heading Four</h4> 5 <h5>Heading Five</h5> 6 <h6>Heading Six</h6> 7 <p>Paragraph</p> 8 Bold 9 <i>Italics</i> 10 <q>Quote</q> 11 Strikethrough</pre>	<pre>1 2 3 4 5 6 7 8 9 10 11 12 13</pre>	

Split	HTML	CSS	Output
	<pre>1 <!DOCTYPE html> 2 <html> 3 <head> 4 <meta charset="utf-8"> 5 <title> 6 </title> 7 </head> 8 <body> 9 </body> 10 </html> 11</pre>	<pre>1 2</pre>	

Split	HTML	CSS	Output
	<pre>1 2 Pegasus 3 Troll 4 Narwhal 5 6 7 Brownies 8 Strawberry Shortcake 9 Oatmeal cookies 10 </pre>	<pre>1 * { font-size: 1.3em; margin-left: 20px</pre>	

Split	HTML	CSS	Output
	<pre>1 <body> 2 <header class="border"></header> 3 <nav></nav> 4 <main></main> 5 <footer class="border"></footer> 6 </body></pre>	<pre>1 /*Changing the header properties */ 2 header { 3 background: url(https://web.deborah 4 height: 235px; 5 width: 300px; 6 background-size: contain; 7 background-repeat: no-repeat; 8 background-position: fit; 9 } 10 11 /*changing the nav properties */ 12 nav {</pre>	

Split	HTML	CSS	Output
	<pre>1 <div> 2 3 <h2>One Night Only</h2> 4 <h3>Mystical Mary's</h3> 5 6 <h1>Traveling Circus</h1> 7 8 <h4>Saturday at 6pm</h4> 9 <h6>The Best Show on Earth</h6> 10 <h5>Curiosities and Oddities</h5> 11</pre>	<pre>1 div {background: #F1A695; color: white;</pre>	

Split	HTML	CSS	Output
	<pre>1 <header> 2 <h1> 3 </h1> 4 <nav> 5 6 7 <a> 8 9 10 11 <a> 12 13 14 </pre>	<pre>1 * { border: 2.5px dashed gray; padding:</pre>	

Split	HTML	CSS	Output
	<pre>1 <div> 2 <h2>One Night Only</h2> 3 <h3>Mystical Mary's</h3> 4 <h1>Traveling Circus</h1> 5 <h4>Saturday at 6pm</h4> 6 <h6>The Best Show on Earth</h6> 7 <h5>Curiosities and Oddities</h5> 8 </div></pre>	<pre>1 div {background: #F1A695; color: white;</pre>	

Split	HTML	CSS	Output
	<pre>1 <a> 2 3 <img src="..../wp-content/uploads/2022/03 4 5 6 7 </pre>	<pre>1 2 3 4 5 6 7 8 9 10 11 12 13 14</pre>	

Split	HTML	CSS	Output
	<pre>1 <div> 2 This is white text on top of my favori 3 </div> 4</pre>	<pre>1 div { 2 background-color: violet; 3 color: white; 4 }</pre>	

Website

When I started developing this course, I wanted to decide the best medium for these lessons to be packaged under. I considered creating animated videos, and app, or a print book. Since the premise was how to build a website, a website felt like the most intuitive platform for the project.

I started out by hand-coding the website. This was working well, and allowed me total freedom with the layout and style. But after building out a single page, I recognized that building each page from scratch would take up more time than anticipated. More important that coding the entire site was creating quality content.

I turned to Divi to use as my framework, allowing me to quickly drag and drop content where I wanted it. It also allowed me to set universal edits more quickly. I added a custom style sheet, pulling in the styles from the hand-coded site and tweaking it so it would correctly apply.

```
94 /*images*/
95 .character img{
96   width: 300px;
97   height: 300px;
98   object-fit: cover;
99   object-position: top;
100  padding-top: 10px;
101  border-radius: 50%;
102  border: 20px solid pink;
103  margin-bottom: -50px;
104  background: white;
105 }
106
107 .character>div{
108   background: #a9c272;
109   padding: 15px;
110   text-align: center;
111   z-index: 9999999;
112 }
113
114 .character>div>h2{
115   color: white;
116   margin-bottom: -30px;
117 }
118
119 .character>div>h4{
120   color: white;
121 }
122
123 .circle img {
124   height: 350px;
125   position: absolute;
126   z-index: 999999999999999;
127   float: left;
128   margin-left: -20px;
129 }
130
131
132 .circle div{
133   background-color: #A9C272;
134   color: white;
135   height: 400px;
136   width: 400px;
137   border-radius: 50%;
138   position: relative;
139   z-index: -999999999999999999999;
140   display: inline-block;
141   margin-left: 100px;
142   padding: 30px;
143 }
144
145 .coll_2.circle div{
146   background-color: #F1A695;
147   float: right;
148 }
149
150 .coll_2.circle img {
151   margin-left: -150px;
152 }
153 }
154
155 .circle li {
156   list-style-type: none;
157   font-size: .8em;
158   padding-left: 30px;
159 }
```



<web coding> AdventureLand

What is a website?

Think of it like a camp site. A camp site is one location where you can find lots of tents. Each tent is going to be different - some might be super different - but they're all connected because they're all on the same camp site.

A website is a collection of pages that are connected to each other. Each one will have different information on them, but they're all part of the same location.

What makes a website?

HTML & CSS

Websites are created using two basic coding languages: There are other coding languages, like JavaScript and PHP, which add other functions to a website. But HTML and CSS are the basic building blocks of everything you see on a website. To introduce you to HTML and CSS, here are some friends:

What is HTML?

HTML stands for Hyper-Text Markup Language. This makes up all the content that you see on a website. All the text, images, and other boxes of information that you find on a website are written using HTML.

This is like the basic framework of a house. The bricks, the cement, the wood. Together, these tools create the structure of a website. Just like HTML tags make up the structure of a website.

What is CSS?

CSS stands for Cascading Style Sheets. This creates all the rules for what a website will look like and adds formatting styles to a website design can look interesting and unique.

If HTML is like the framework of a house, CSS is like the wallpaper, the paint, the furniture, and the decorations. These CSS rules can make tiny changes to try details, or big changes to the entire website. That's pretty powerful!

Are you ready?

HTML and CSS are super fun and easy to learn - and with just a few short activities you can learn how to build your very own websites. If you want to get started and join us in World Wide Wonderland, the best thing you need is your ticket!

Here is a blank ticket, ready for you to make it your own.

- Add your name**
Type your name where it says **My Name** in the HTML box.
- Pick a color**
Choose a color from the chart below and put the name of it where it says **COLOR** in the CSS box.
- Play Around**
You did it! Now see if you can change other things, like the font color or border size.

Build With Us!



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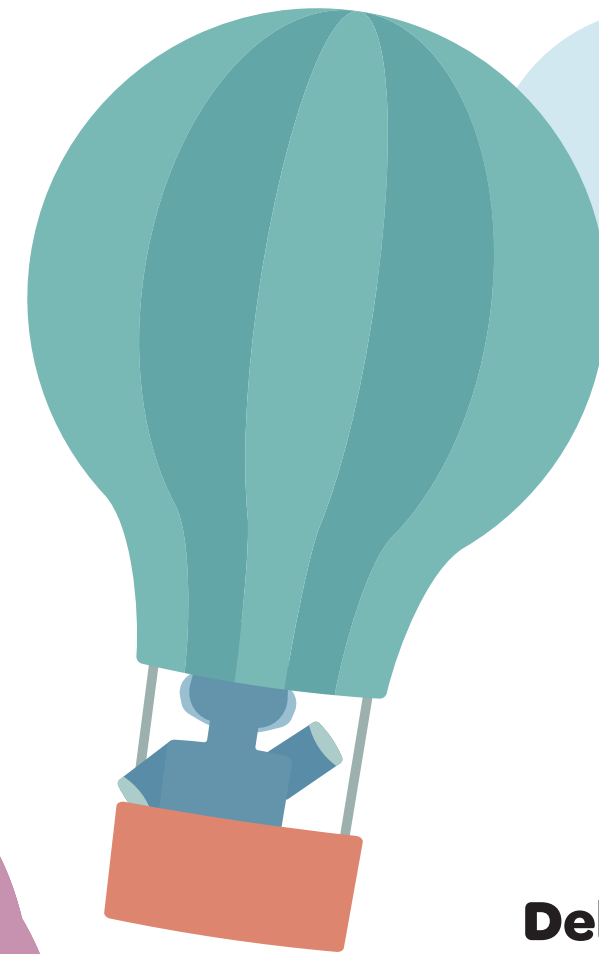
Build with us!

Moving Forward

I had so much fun working on this course, but I recognize I've barely scratched the surface. There is so much potential ahead, and a million different directions I could take it. I have an entire CSS course to finish and refine and extensive user testing to do.

My goal is to take this project to a point where it's ready to package and deliver. There's potential to deliver this as an exclusive course or keep it free online. While it's housed on a website currently, repurposing it in a book or as a video series is also an option.

I am still so passionate about this concept and don't want to let it go, and I'm so excited to continue developing it into something I know can be successful.



**Get in
Touch!**

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