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Designing a Page Layout Using CSS3

Course textbook: *Tutorial 3*, p.169

Topic Scenario: *Pandaisia Chocolates*

Anne Ambrose is the owner and head chocolatier of Pandaisia Chocolates, a chocolate shop located in New Plymouth. You have been asked to assist on the redesign of the company's website. Anne has provided you with three pages from the website to start your work. She has written all of the content, compiled the necessary images and graphics, and written some of the text and colour styles. She needs you to complete the project by designing the page layout using the CSS layout properties.



Learning Objectives

1. Create a reset style sheet
2. Explore page layout designs
3. Center a block element
4. Create a floating element
5. Clear a floating layout
6. Prevent container collapse
7. Explore grid-based layouts
8. Create a layout grid
9. Format a grid
10. Explore the CSS grid styles
11. Explore positioning styles
12. Work with relative positioning
13. Work with absolute positioning
14. Work with overflow content
15. Create a layout grid
16. Format a grid
17. Explore the CSS grid styles
18. Explore positioning styles
19. Work with relative positioning
20. Work with absolute positioning
21. Work with overflow content



Page Layout with Floating Elements



Introducing the `display` Style

`display: type;`

Figure 3-1 Some values of the display property

Display Value	Appearance
block	Displayed as a block
table	Displayed as a web table
inline	Displayed in-line within a block
inline-block	Treated as a block placed in-line within another block
run-in	Displayed as a block unless its next sibling is also a block, in which case, it is displayed in-line, essentially combining the two blocks into one
inherit	Inherits the display property of the parent element
list-item	Displayed as a list item along with a bullet marker
none	Prevented from displaying, removing it from the rendered page

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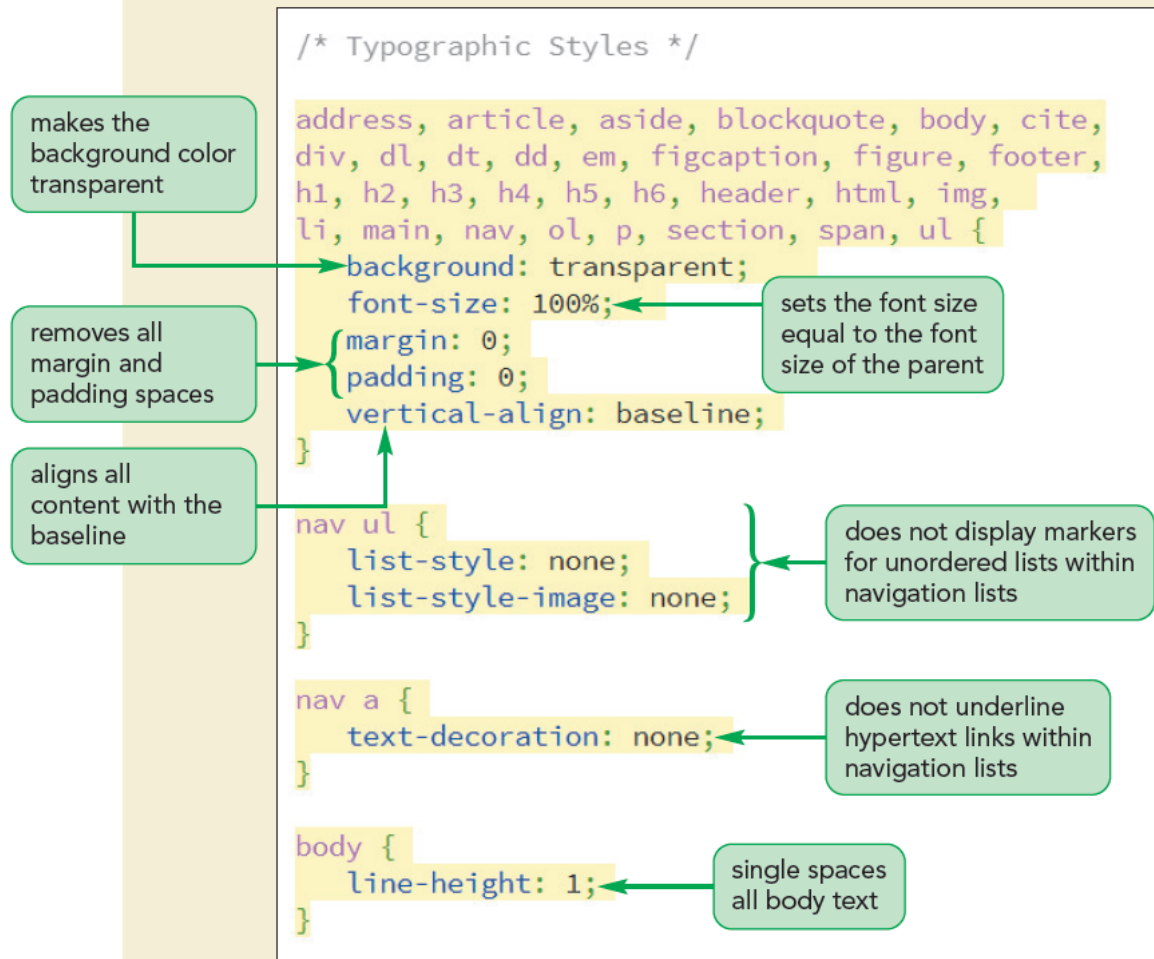
Creating a Reset Style Sheet - 1

Figure 3-2 Displaying HTML5 structural elements as blocks

```
/* Structural Styles */  
  
article, aside, figcaption, figure,  
footer, header, main, nav, section {  
    display: block;  
}
```

Creating a Reset Style Sheet - 2

Figure 3-3 Completing the reset style sheet



Exploring Page Layout Designs

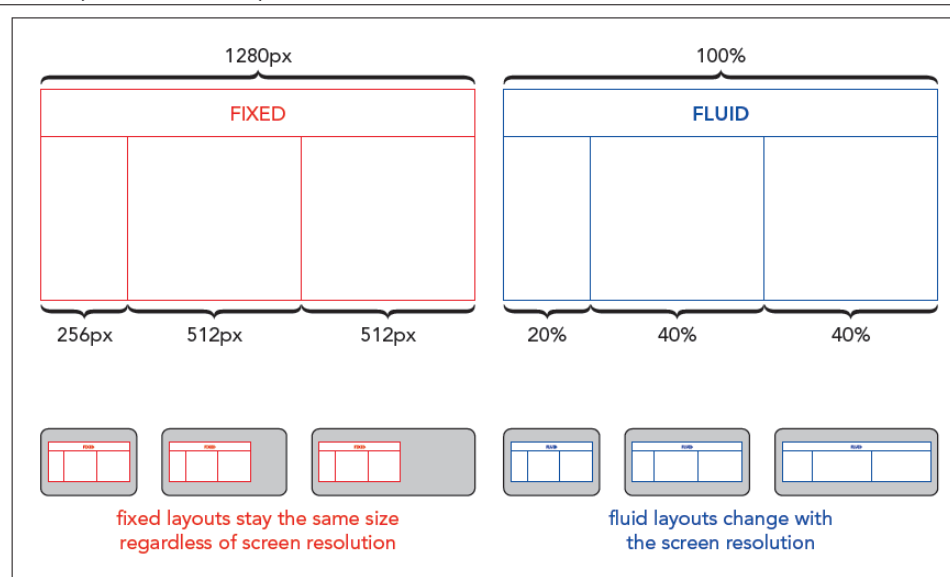
Web page layouts fall into three categories:

- **Fixed layout**
- **Fluid layout**
- **Elastic layout**

Responsive design:

Page design changes in response to rendering devices

Figure 3-5 Fixed layouts vs. fluid layouts



Working with Width and Height

`width: value;`
`height: value;`

Figure 3-6 Setting the width of the page body and logo

web page width is 95% of the browser window ranging from 640 pixels to 960 pixels

```

/* Body Styles */
body {
  max-width: 960px;
  min-width: 640px;
  width: 95%;
}

/* Body Header Styles */
body > header > img {
  display: block;
  width: 100%;
}
  
```

displays the logo image as a block element

sets the width of the logo to 100% of the page body

Figure 3-7 Initial view of the body header

page body width is 95% of the browser window

browser window background

Pandaisia Chocolates

414 Tree Lane • Essex, VT 05452

Home

Online Store

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logo is 100% of the body width

body background

Centering a Block Element

```
body {  
    margin-left: auto;  
    margin-right: auto;  
}
```



Vertical Centering

Style Rule:

```
div {  
    height: 40px;  
    display: table-cell;  
    vertical-align: middle;  
}
```

Example HTML:

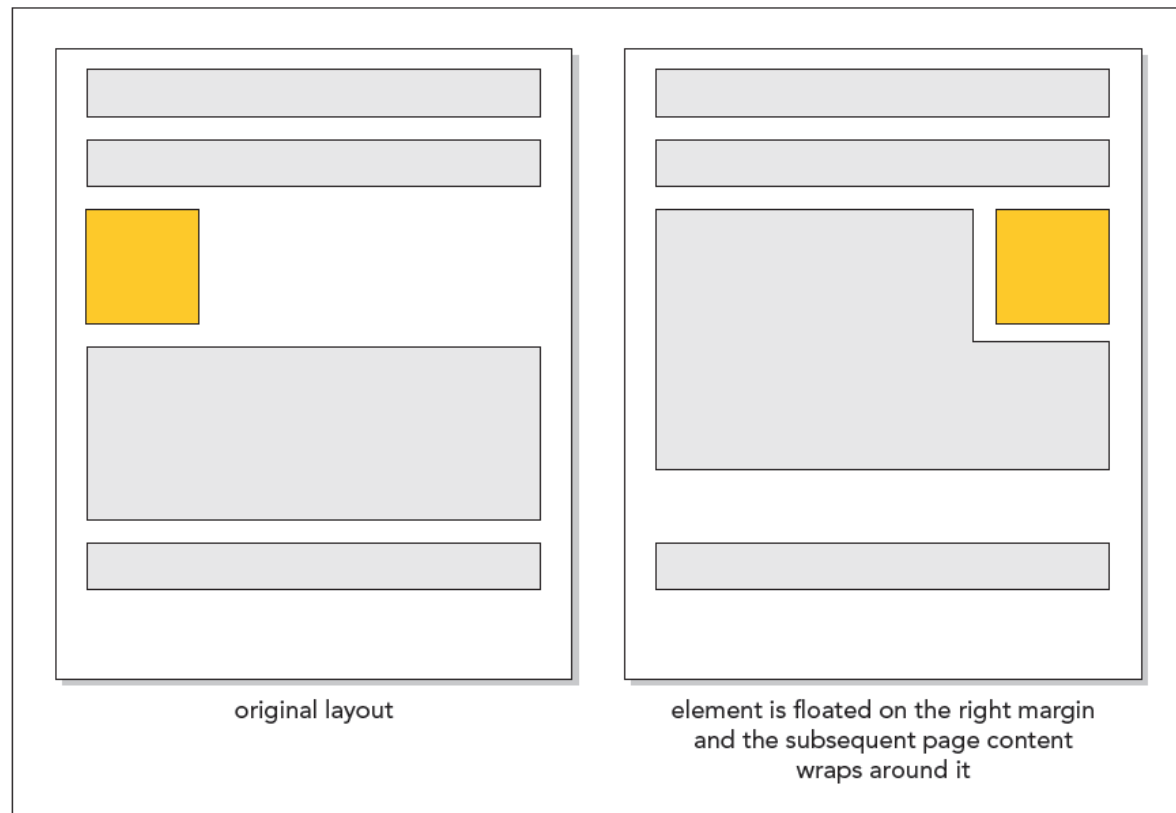
```
<div>  
    <h1>  
        Pandaisia Chokololates  
    </h1>  
</div>
```



Floating Page Content - 1

`float: position;`

Figure 3-9 Floating an element



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Floating Page Content - 2

Figure 3-13

Formatting hyperlinks in horizontal navigation lists

```
/* Horizontal Navigation Styles */

nav.horizontalNavigation li {
  display: block;
  float: left;
}

nav.horizontalNavigation a {
  display: block;
  text-align: center;
}
```

displays the
link as a block

centers the
link text within
the block

Figure 3-14

Links in the body header

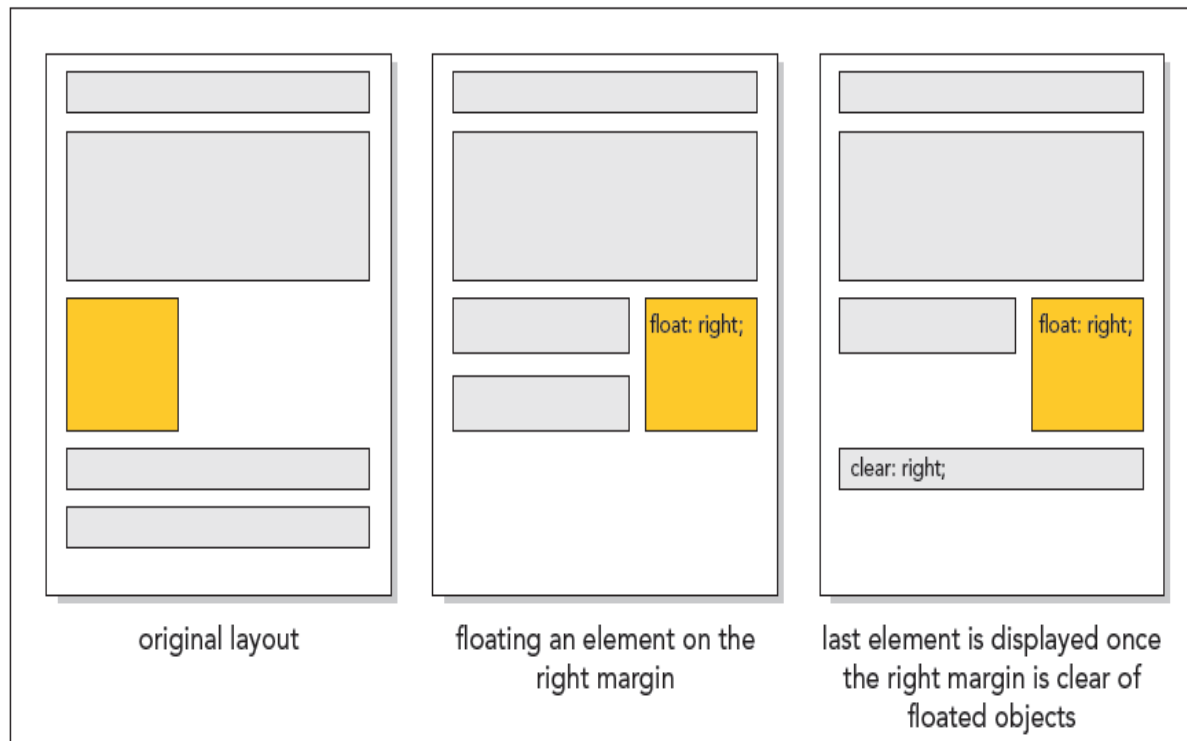
each hypertext
link displayed as
a block with the
link text centered
within the block



Clearing a Float - 1

`clear: position;`

Figure 3-15 Clearing a float

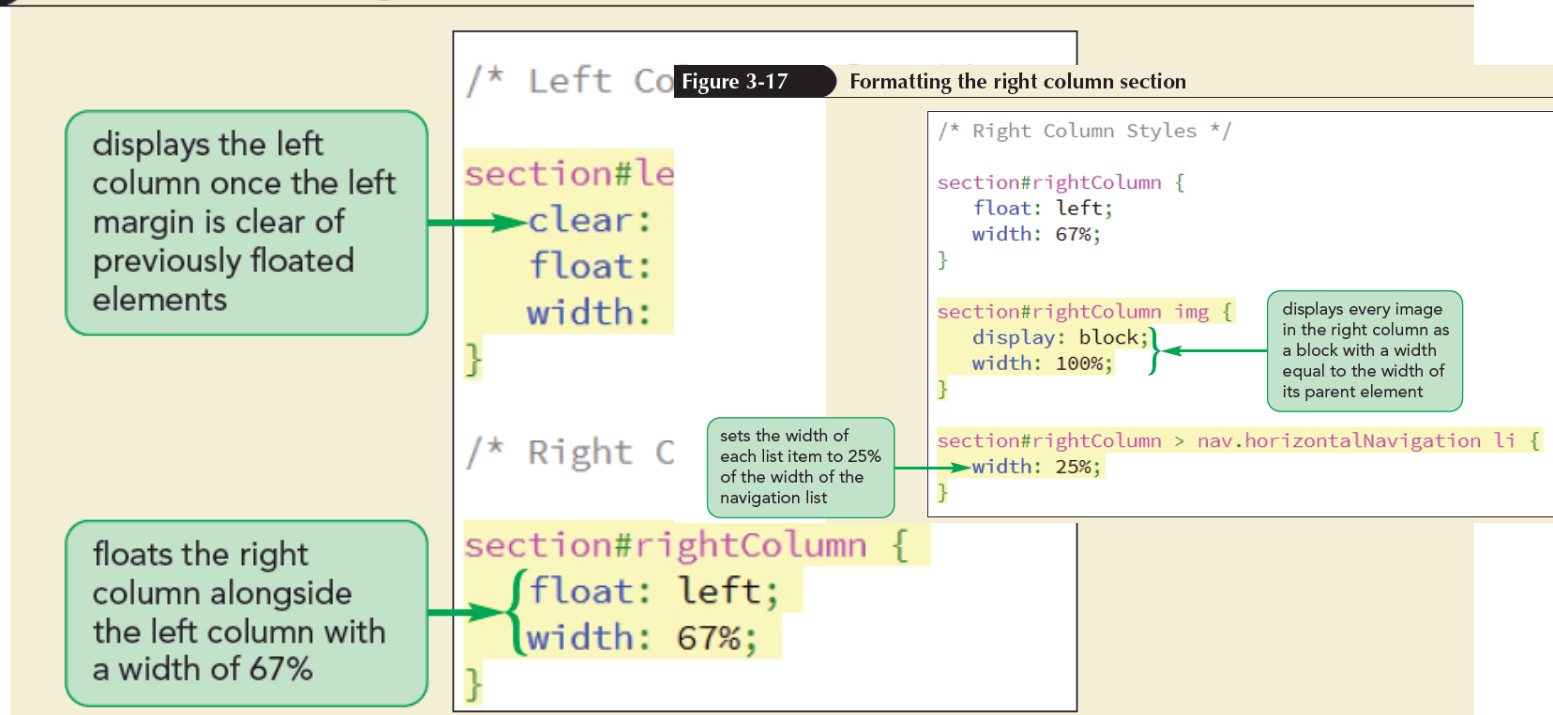


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Clearing a Float - 2

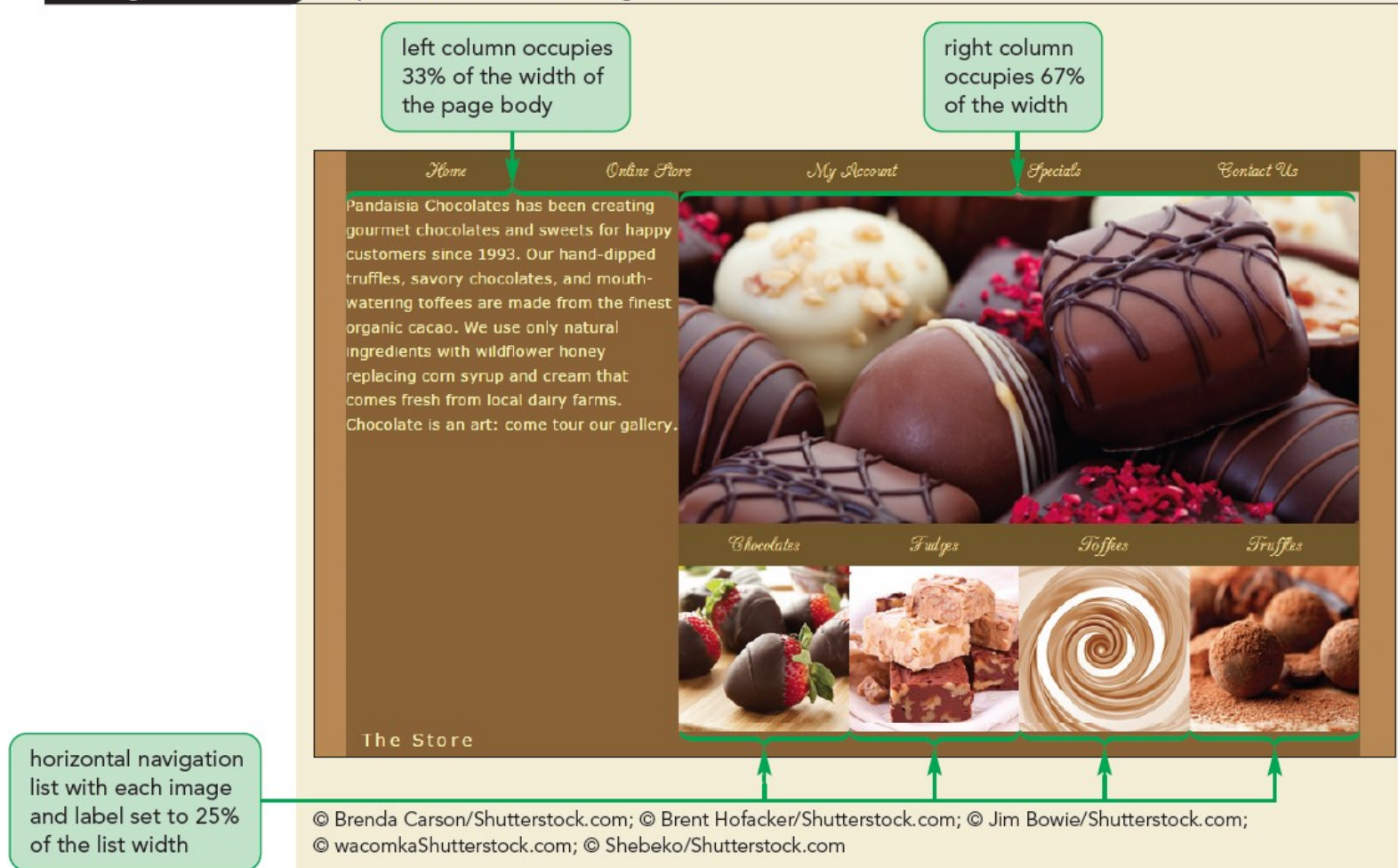
Figure 3-16

Float the left and right column sections



Clearing a Float - 3

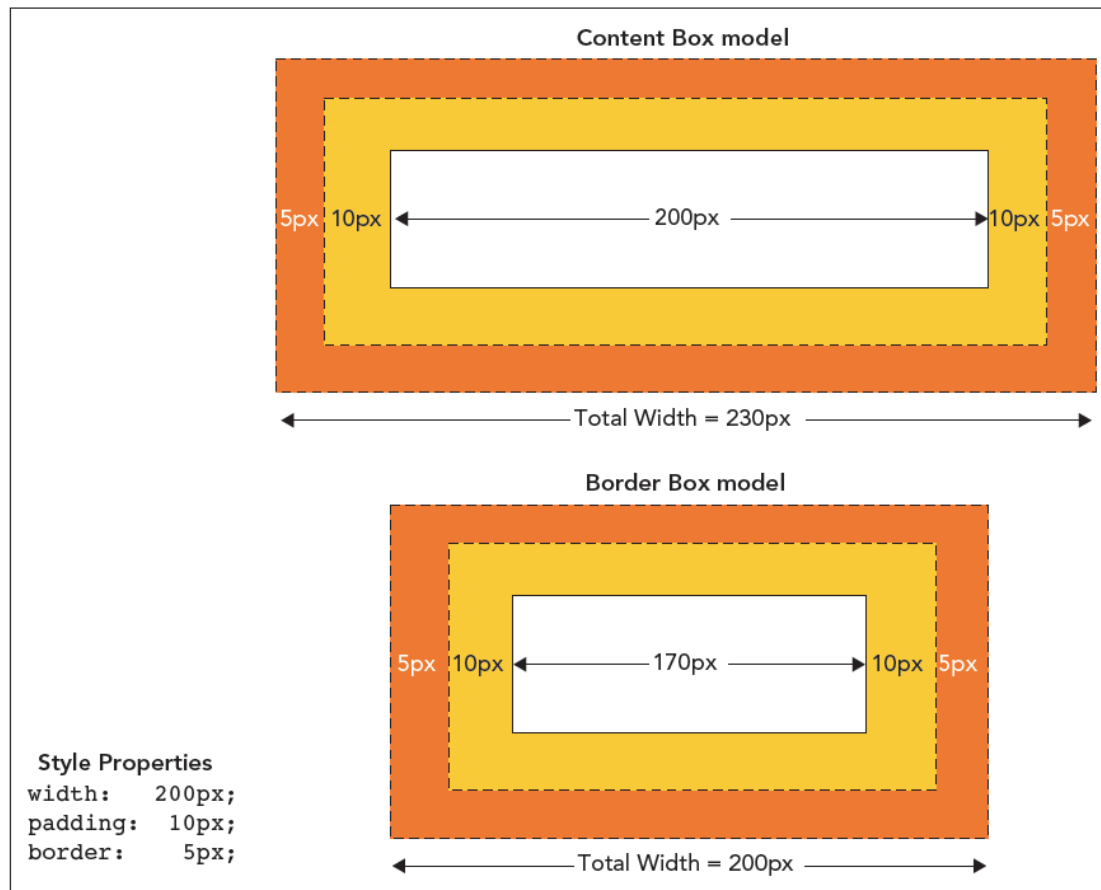
Figure 3-18 Layout of the left and right columns



Refining a Floated Layout

`box-sizing: type;`

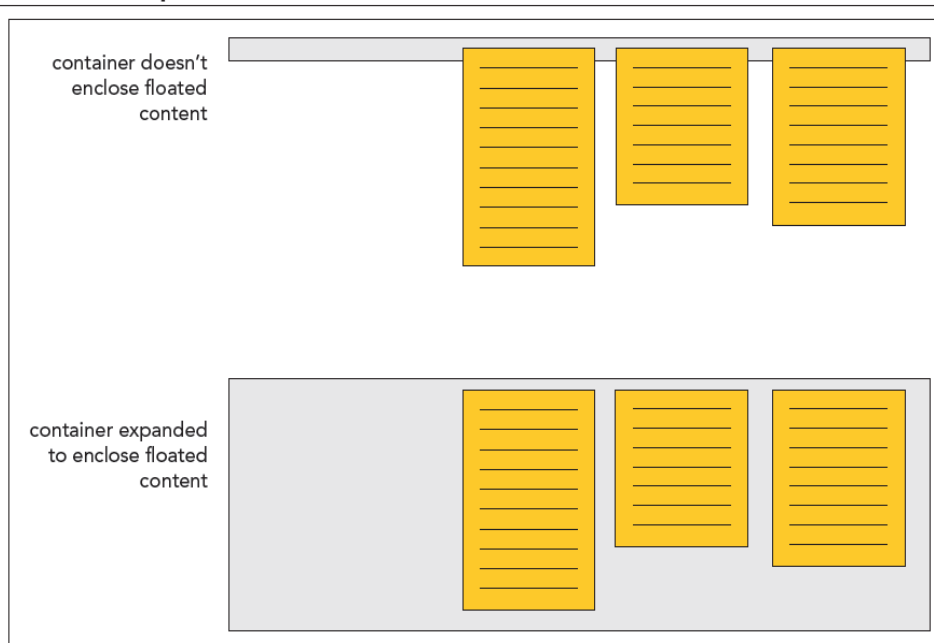
Figure 3-21 Comparing the Content Box and Border Box models



Working with Container Collapse

```
container::after {  
    clear: both;  
    content: "";  
    display: table;  
}
```

Figure 3-26 Container collapse



Page Layout Grids

A grid layout arranges the page content within **grid rows** with **grid columns** floated inside those rows.

Red outline indicates the location of grid rows and columns.



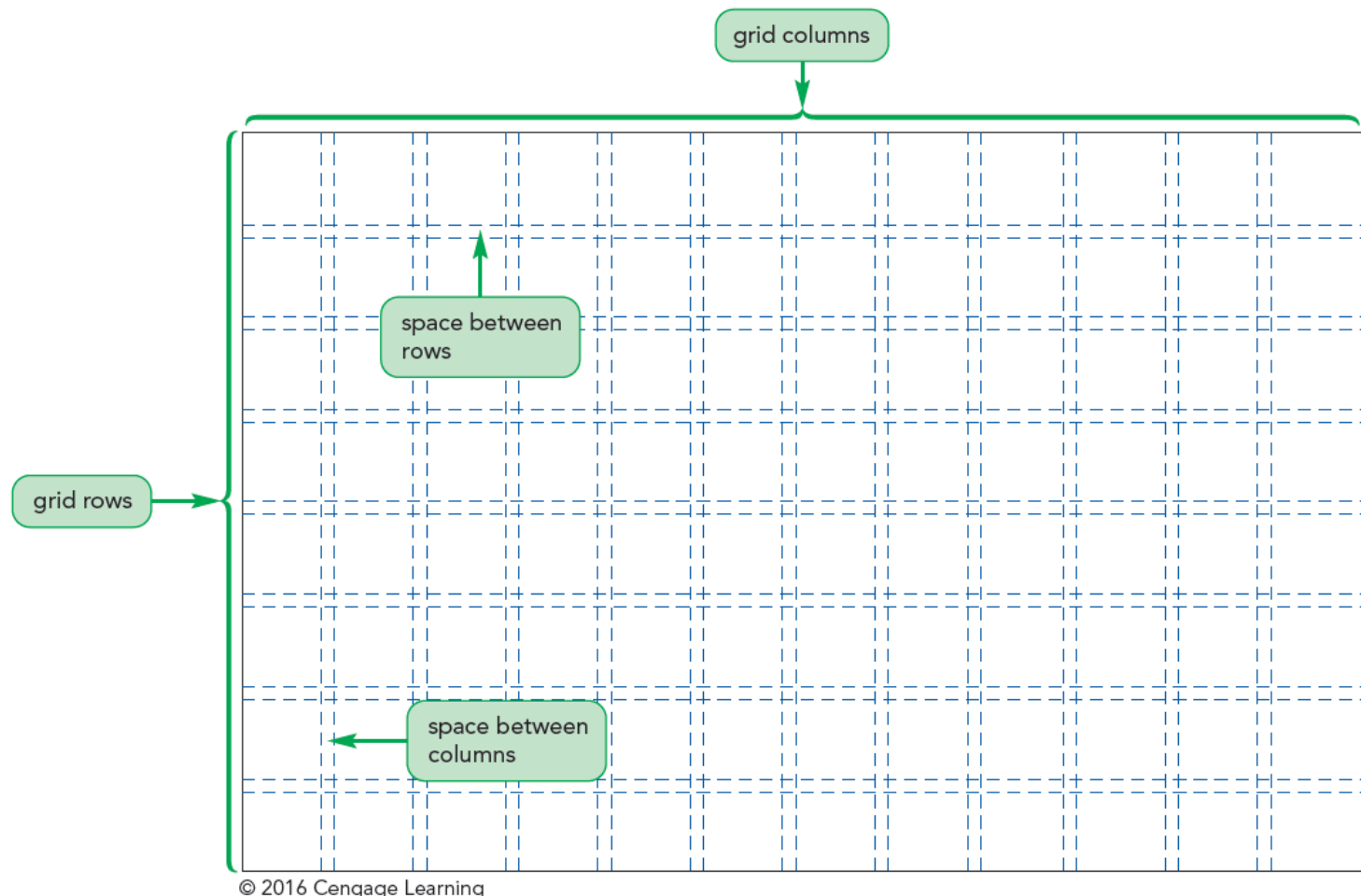
Grid rows are displayed starting on a new line.

The grid columns are floated with their rows.



Overview of Grid-Based Layouts

Figure 3-29 Page grid



CSS Frameworks

What is a “**framework**”?

Popular *CSS frameworks* include:

- ☐ **Bootstrap**
- ☐ **YAML4**
- ☐ **960 Grid System**
- ☐ **Foundation 3**



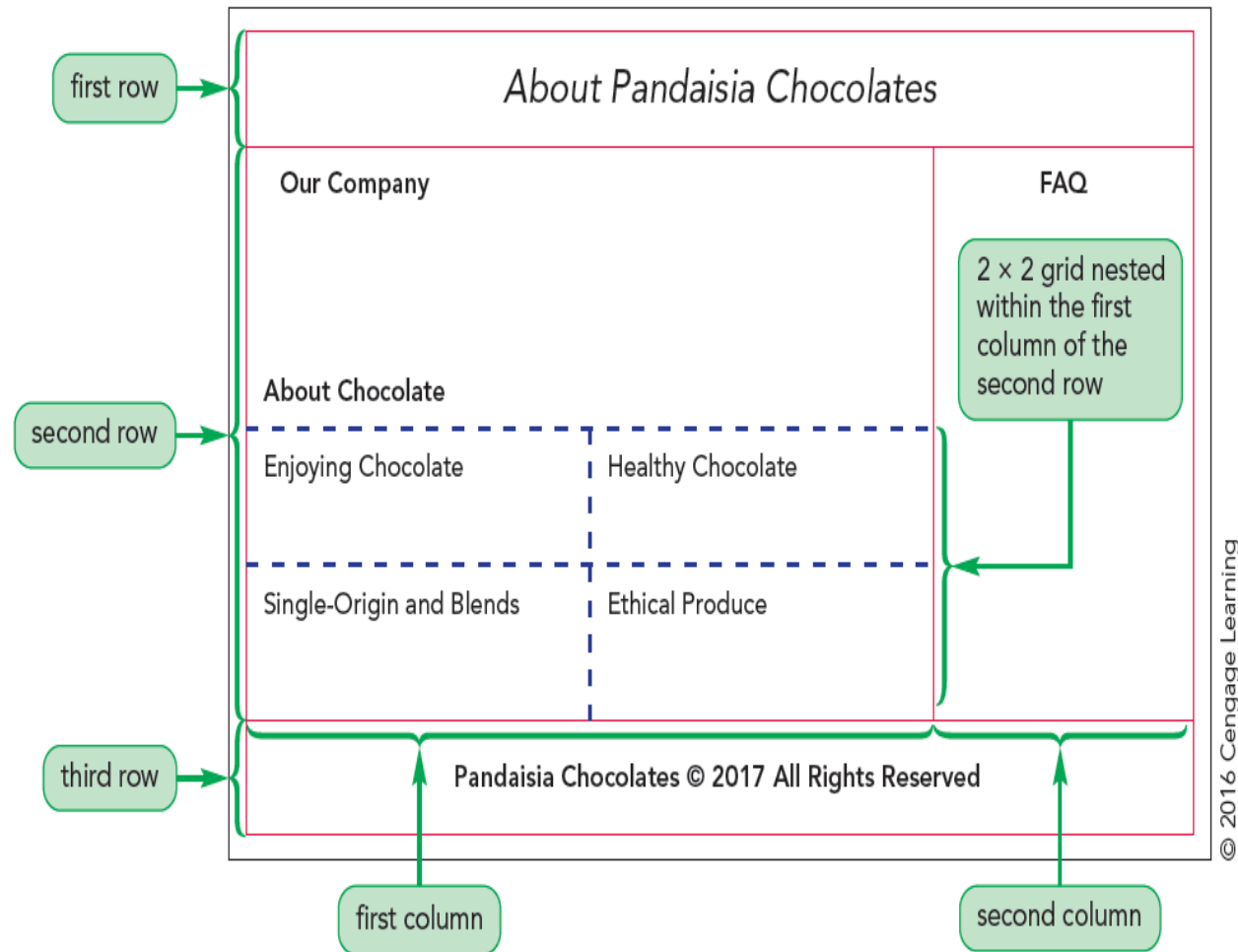
Setting up a Grid - 1

```
<div class="row">  
  <div class="column1"></div>  
  <div class="column2"></div>  
</div>
```



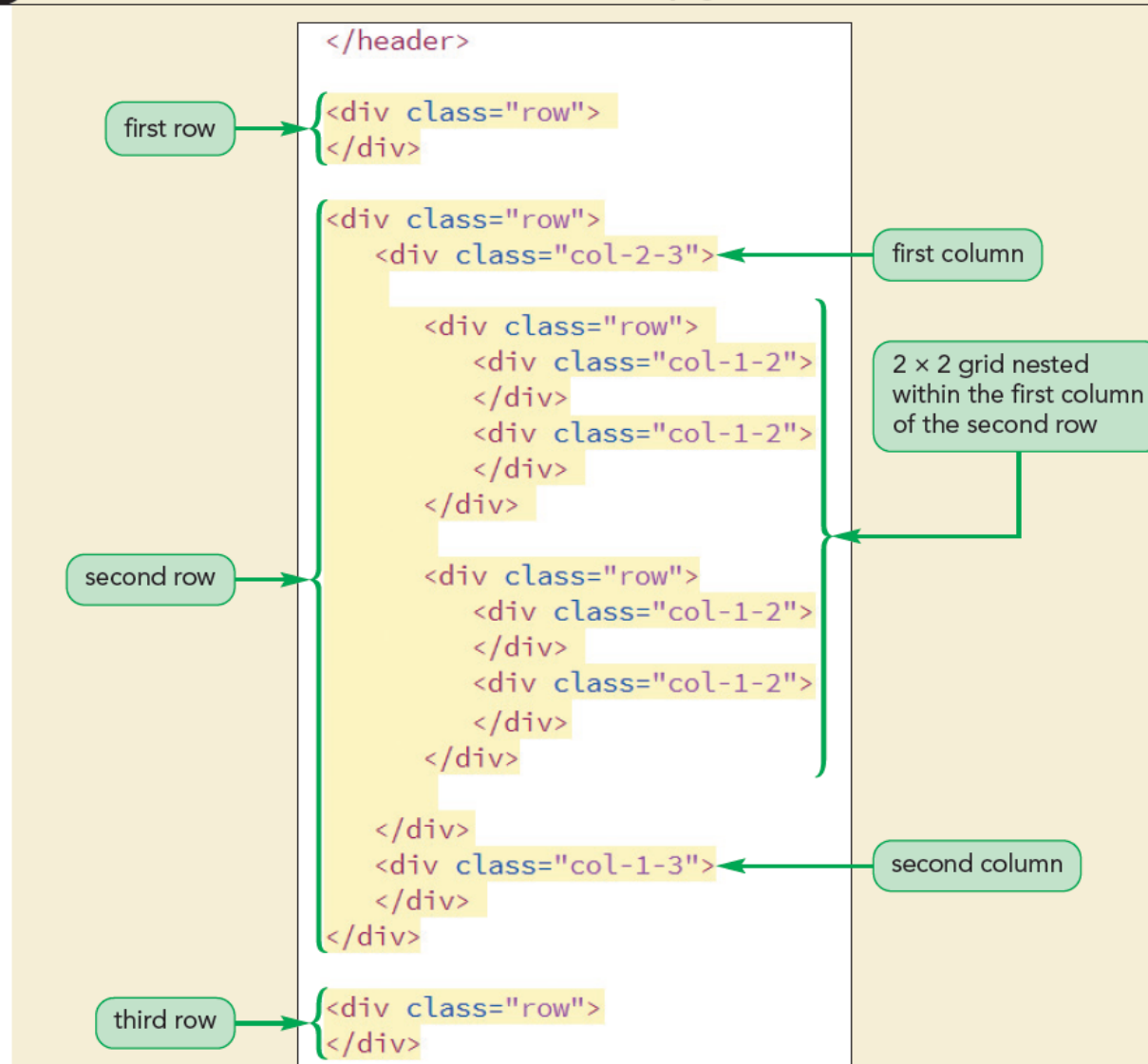
Setting up a Grid - 2

Figure 3-32 Proposed grid layout for the About Pandaisia Chocolates page



Setting up a Grid - 3

Figure 3-33 div elements in the About Pandaisia Chocolates page



Designing the Grid Rows

Figure 3-34 Styles for row div elements

```
/* Grid Rows Styles */
```

```
div.row {  
  clear: both;  
}
```

displays the row only when both margins are clear of previously-floated columns

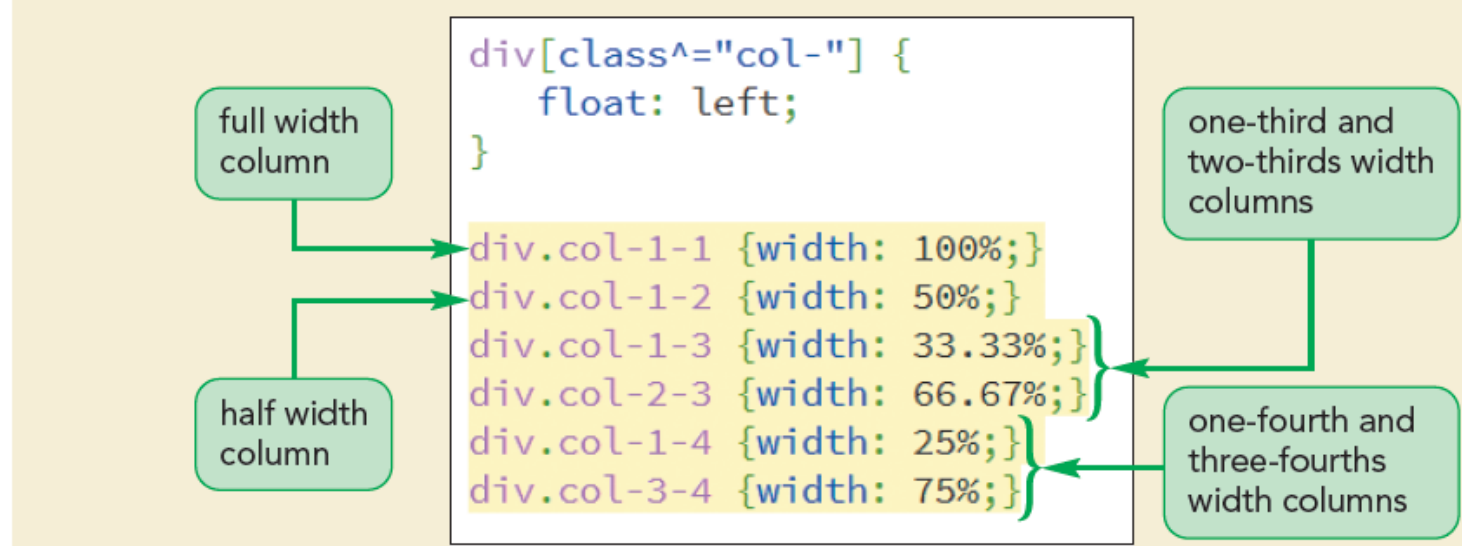
```
div.row::after {  
  clear: both;  
  content: "";  
  display: table;  
}
```

automatically expands the row to cover floating columns

Designing the Grid Columns

`class="col-numerator-denominator"`

Figure 3-36 Setting the column widths



Adding the Page Content

Figure 3-39

Adding content about chocolate

row heading

```

<div class="row">
  <h2>About Chocolate</h2>
  <div class="col-1-2">
    <h3>Enjoying Chocolates</h3>
    <p>We believe that the best chocolate is fresh chocolate.
      Preservatives change the flavor and texture of chocolate.
      For the best results, our chocolates should be consumed
      within a few days of purchase. Store them in a
      cool, dark place at a temperature of 60&deg; to
      70&deg; such as a refrigerator or wine cellar.</p>
  </div>
  <div class="col-1-2">
  </div>
</div>

<div class="row">
  <div class="col-1-2">
  </div>
  <div class="col-1-2">
  </div>
  <div class="col-1-2">
  </div>
</div>
</div>

```

content about
chocolate pasted
into the first nested
column

Outlining a Grid

`Outline-width: value;` – Specifies the width of a line.

- Properties of *value* are: `thin`, `medium`, or `thick`

`Outline-color: color;` – Specifies the color of a line.

- Properties of *color* are: CSS color name or value

`Outline-style: style;` – Specifies the design of a line

- Properties of *style* are: `solid`, `double`, `dotted`, `dashed`, `groove`, `inset`, `ridge`, or `outset`



Defining a CSS Grid

```
selector {  
    display: grid;  
    grid-template-rows: track-list;  
    grid-template-columns: track-list;  
}
```

Example:

```
grid-template-columns: 200px 250px 1fr 2fr;
```



Assigning Content to Grid Cells

`grid-row-start: integer;`

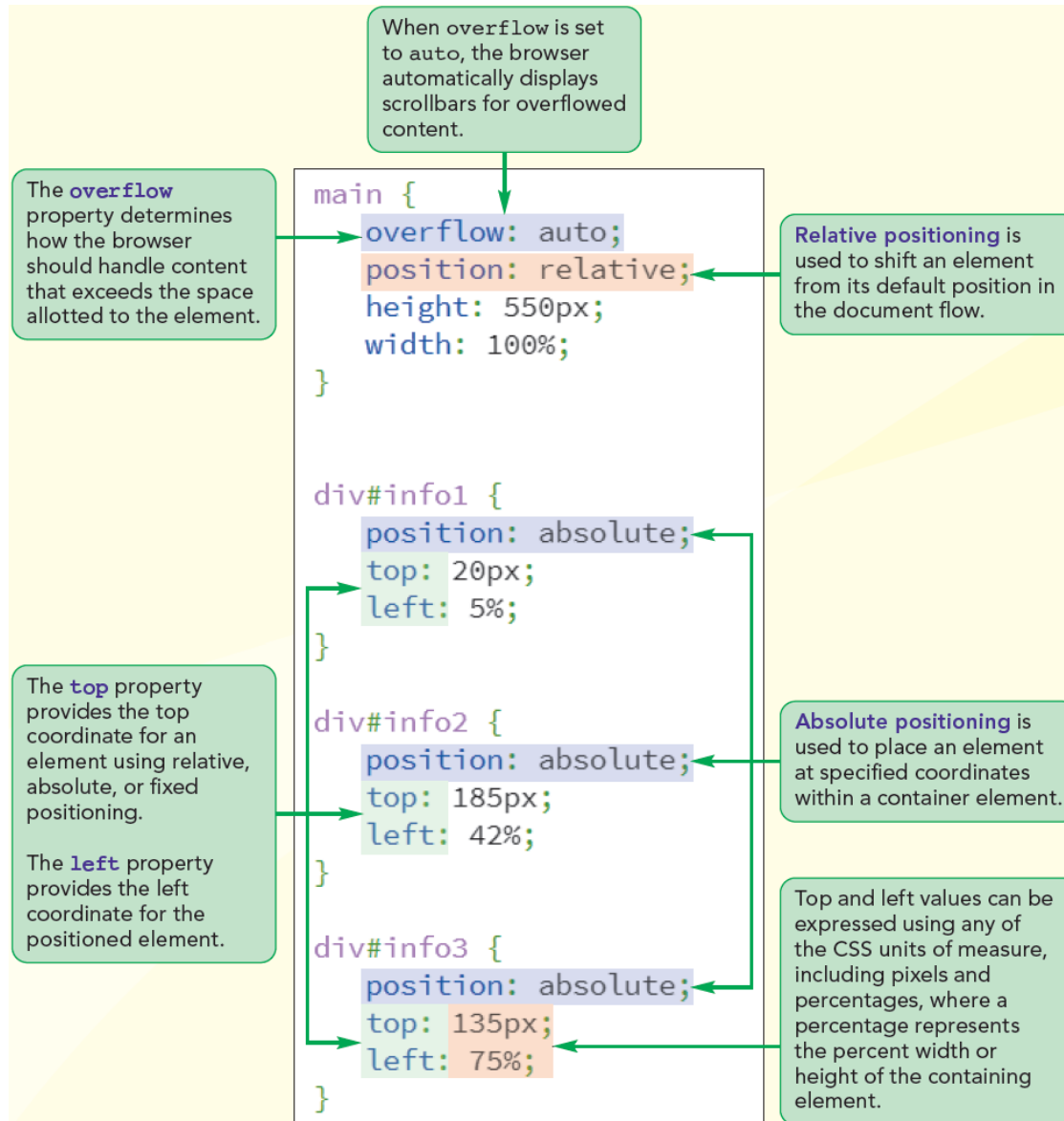
`grid-row-end: integer;`

`grid-column-start: integer;`

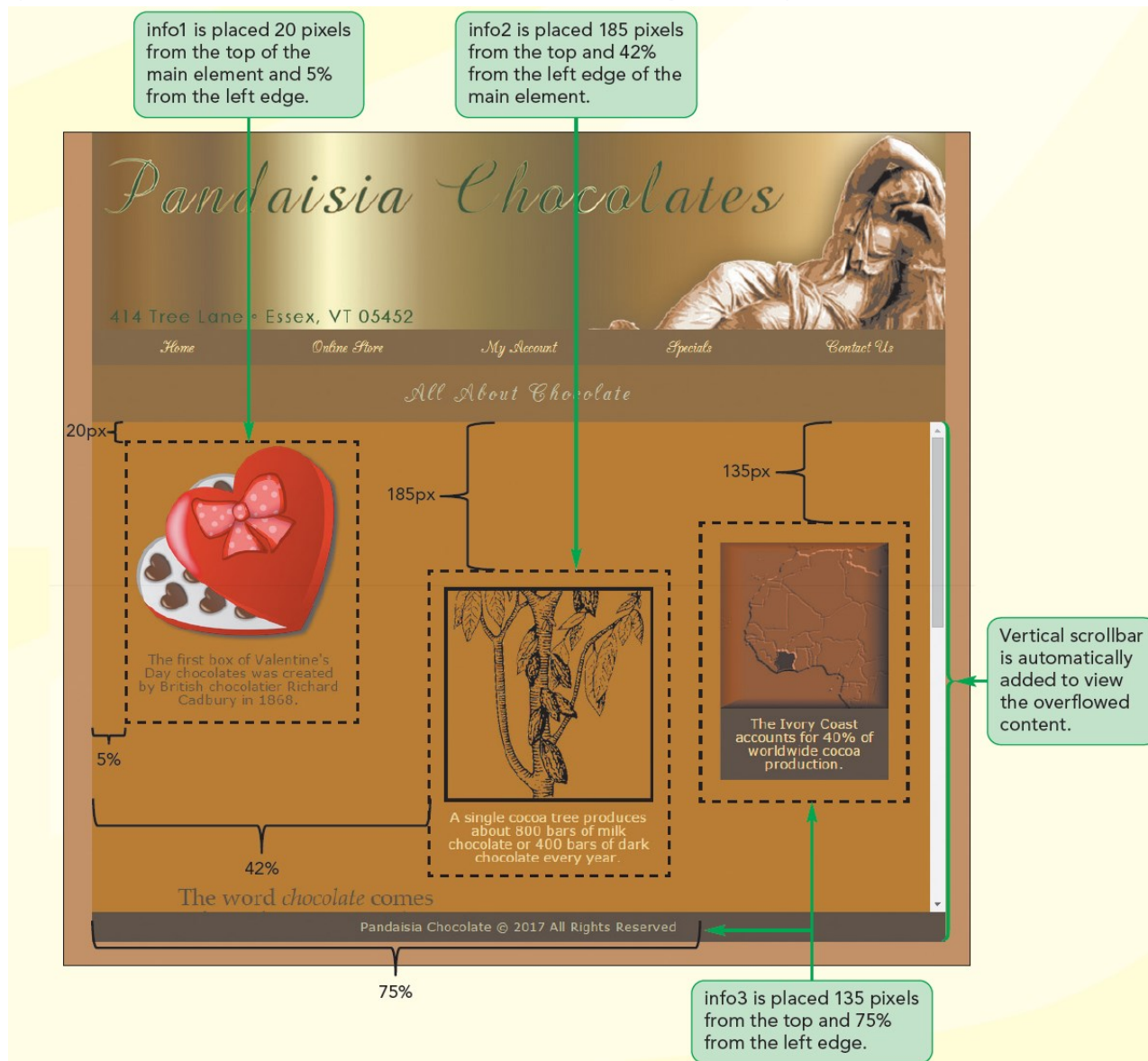
`grid-column-end: integer;`



Layout with Positioning Styles - 1



Layout with Positioning Styles - 2



The CSS positioning Styles - 1

`position: type;`

`top: value;`

`right: value;`

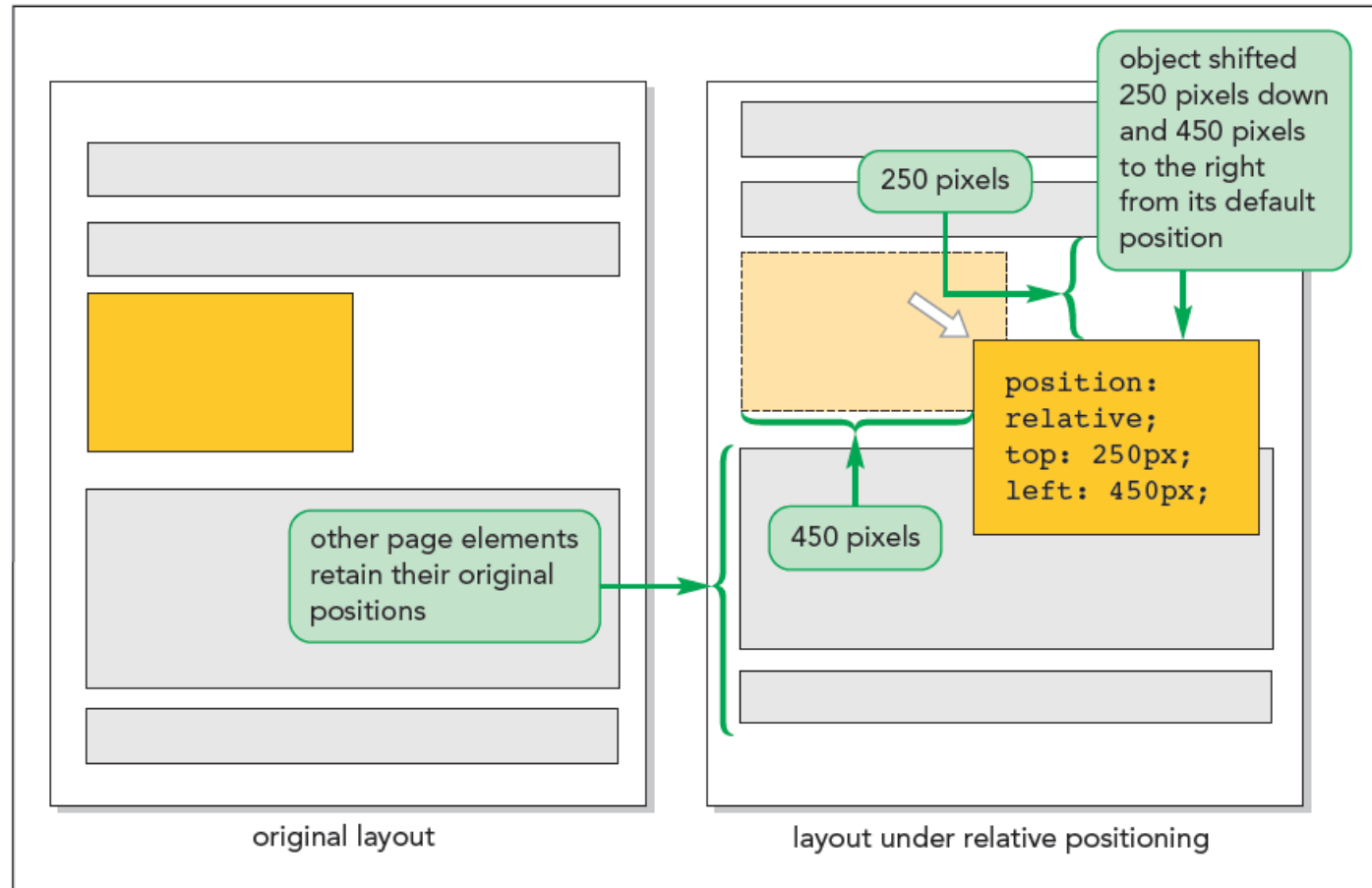
`bottom: value;`

`left: value;`



The CSS Positioning Styles - 2

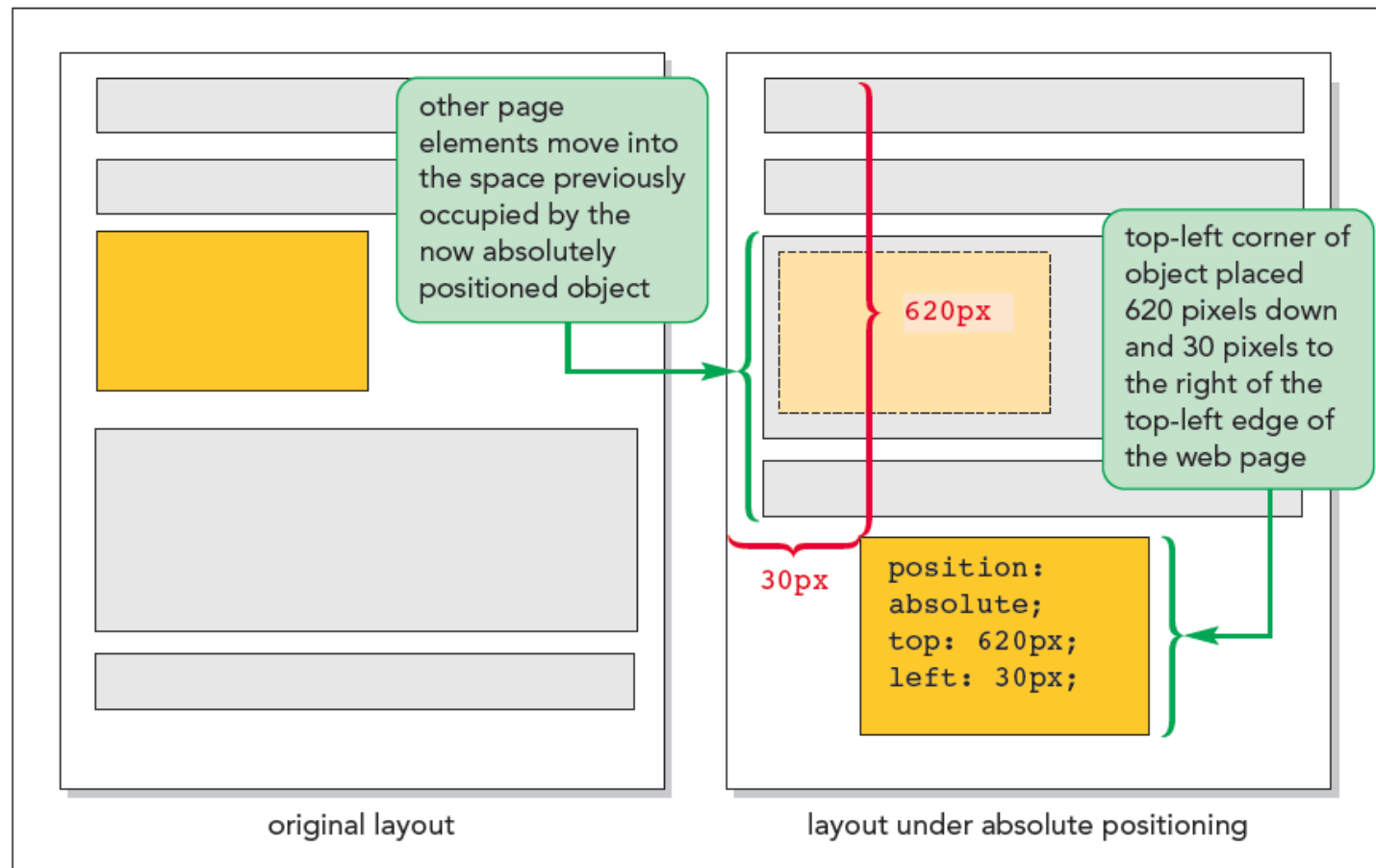
Figure 3-46 Moving an object using relative positioning



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The CSS Positioning Styles - 3

Figure 3-47 Moving an object using absolute positioning



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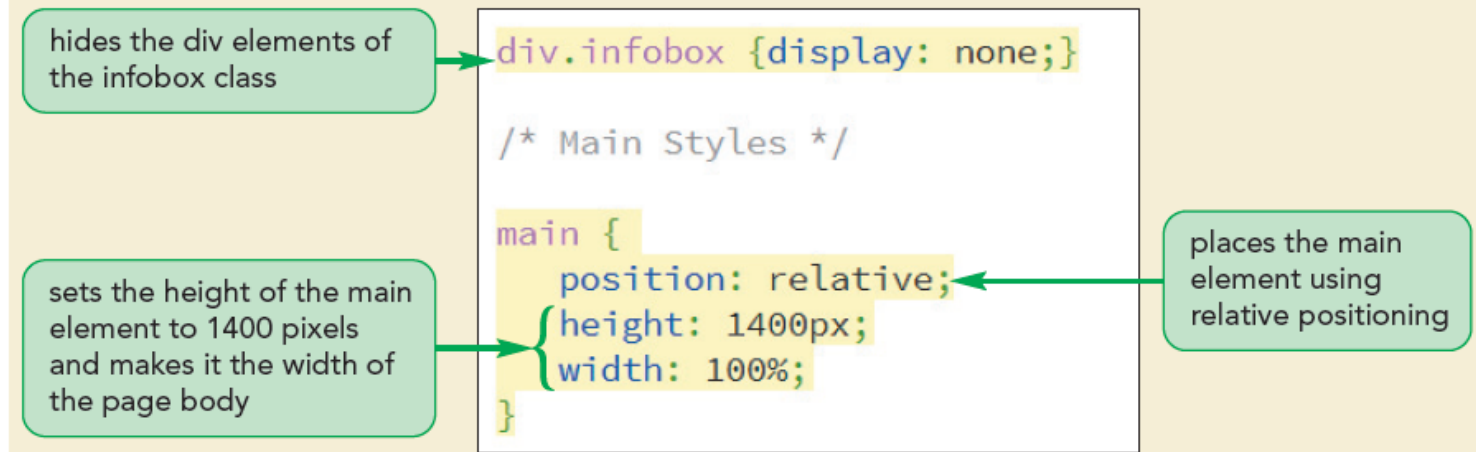
Fixed and Inherited Positioning

Fixed positioning – Fixes an object within a browser window to avoid its movement

Inherited positioning – Allows an element to inherit the position value of its parent element



Using the Positioning Styles - 1

Figure 3-50**Setting the display styles of the main element**

Using the Positioning Styles - 2

Figure 3-51 Placing the first information box

```
/* Infographic Styles */
```

```
div.infobox {  
  position: absolute;  
}
```

places every
information box
using absolute
positioning

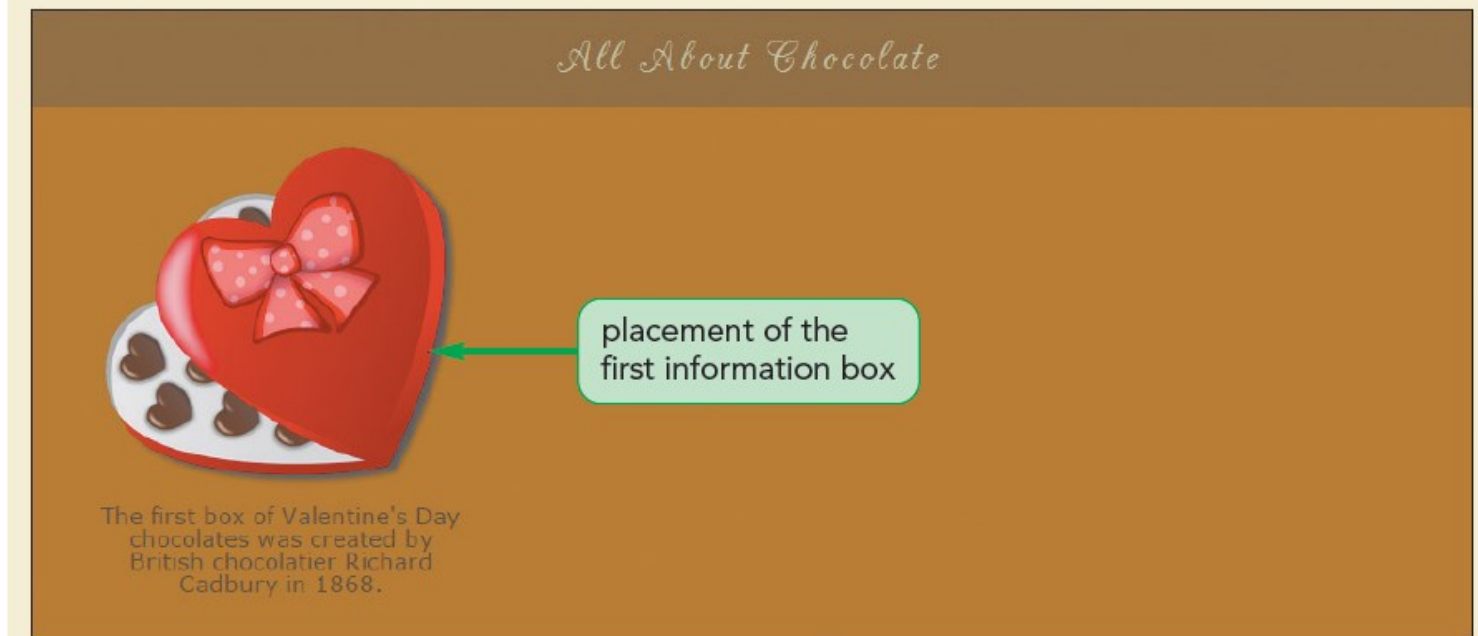
```
/* First Infographic */
```

```
div#info1 {  
  display: block;  
  top: 20px;  
  left: 5%;  
}
```

places the first box
20 pixels from the
top edge of the
main element and
5% from the left

Using the Positioning Styles - 3

Figure 3-52 Appearance of the first information box



Using the Positioning Styles - 4

Figure 3-53**Positions of the second and third boxes**

places the second box 185 pixels from the top and 42% from the left

```
/* Second Infographic */
```

```
div#info2 {  
    display: block;  
    {top: 185px;  
    left: 42%;  
}
```

places the third box 135 pixels from the top and 75% from the left

```
/* Third Infographic */
```

```
div#info3 {  
    display: block;  
    {top: 135px;  
    left: 75%;  
}
```


Using the Positioning Styles - 5

Figure 3-54

Placement of the first three boxes

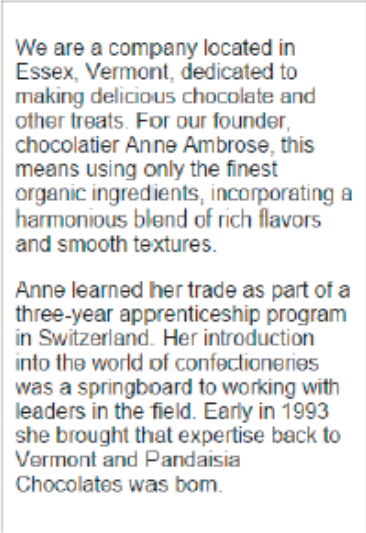
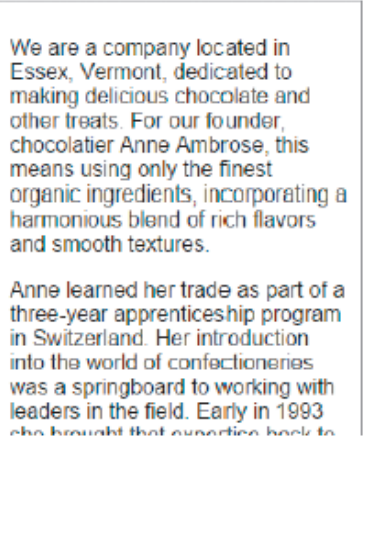
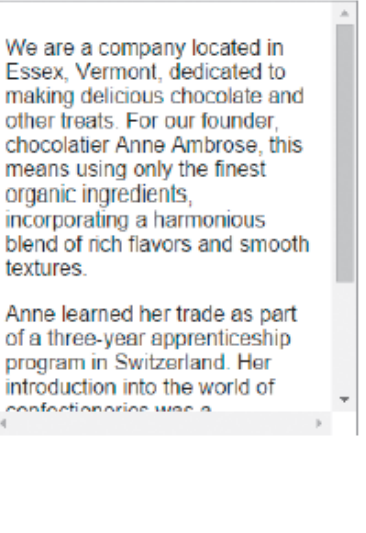
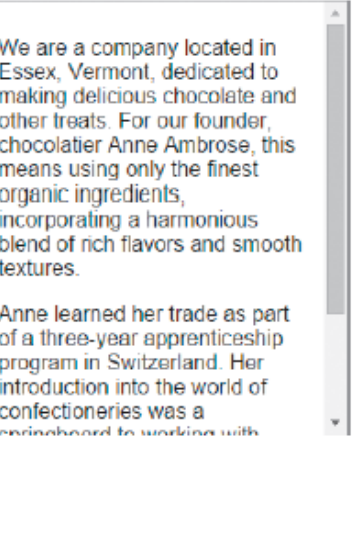


Handling Overflow - 1

`overflow: type;`

Figure 3-59

Values of the overflow property

<code>overflow: visible;</code>	<code>overflow: hidden;</code>	<code>overflow: scroll;</code>	<code>overflow: auto;</code>
 <p>We are a company located in Essex, Vermont, dedicated to making delicious chocolate and other treats. For our founder, chocolatier Anne Ambrose, this means using only the finest organic ingredients, incorporating a harmonious blend of rich flavors and smooth textures.</p> <p>Anne learned her trade as part of a three-year apprenticeship program in Switzerland. Her introduction into the world of confectioneries was a springboard to working with leaders in the field. Early in 1993 she brought that expertise back to Vermont and Pandaisia Chocolates was born.</p>	 <p>We are a company located in Essex, Vermont, dedicated to making delicious chocolate and other treats. For our founder, chocolatier Anne Ambrose, this means using only the finest organic ingredients, incorporating a harmonious blend of rich flavors and smooth textures.</p> <p>Anne learned her trade as part of a three-year apprenticeship program in Switzerland. Her introduction into the world of confectioneries was a springboard to working with leaders in the field. Early in 1993 she brought that expertise back to</p>	 <p>We are a company located in Essex, Vermont, dedicated to making delicious chocolate and other treats. For our founder, chocolatier Anne Ambrose, this means using only the finest organic ingredients, incorporating a harmonious blend of rich flavors and smooth textures.</p> <p>Anne learned her trade as part of a three-year apprenticeship program in Switzerland. Her introduction into the world of confectioneries was a</p>	 <p>We are a company located in Essex, Vermont, dedicated to making delicious chocolate and other treats. For our founder, chocolatier Anne Ambrose, this means using only the finest organic ingredients, incorporating a harmonious blend of rich flavors and smooth textures.</p> <p>Anne learned her trade as part of a three-year apprenticeship program in Switzerland. Her introduction into the world of confectioneries was a</p>
box extends to make all of the content visible	overflowed content is hidden from the reader	horizontal and vertical scrollbars are added to the box	scrollbars are added only where needed

Handling Overflow - 2

Figure 3-60**Setting the overflow property**

displays scrollbars
if the content
overflows the
allotted height

```
/* Main Styles */  
  
main {  
  overflow: auto;  
  position: relative;  
  height: 450px;  
  width: 100%;  
}
```

sets the height of
the infographic
to 450 pixels



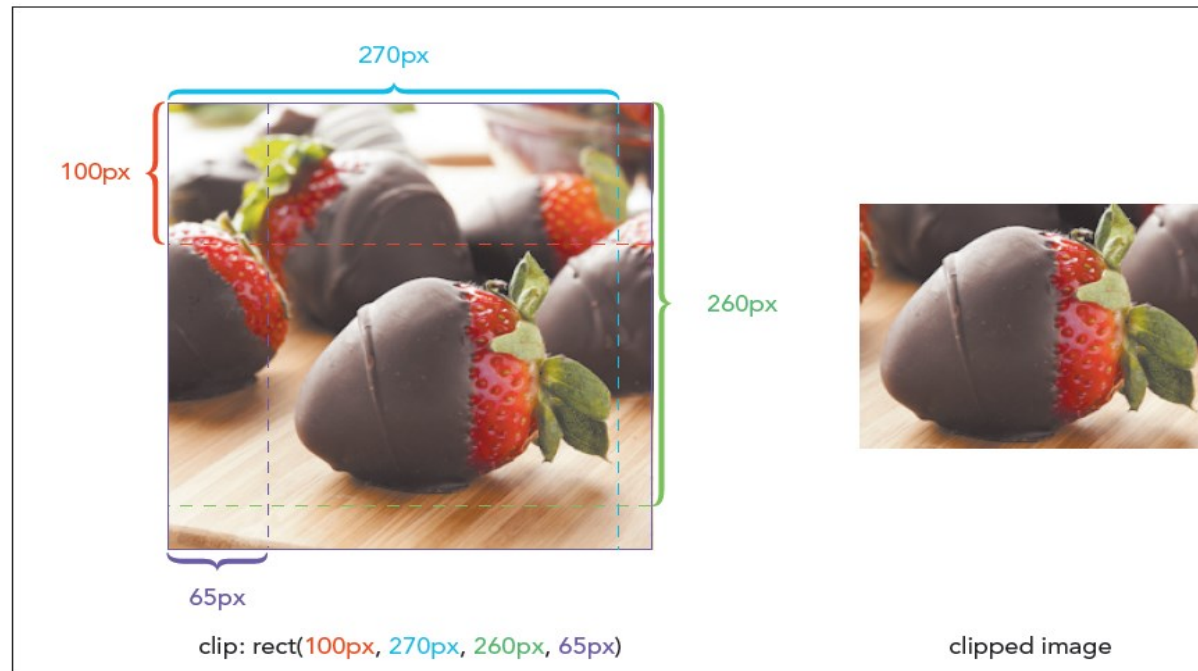
Tē Kunenga
ki Pārehuroa

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Clipping an Element

```
clip: rect(top, right, bottom, left);
```

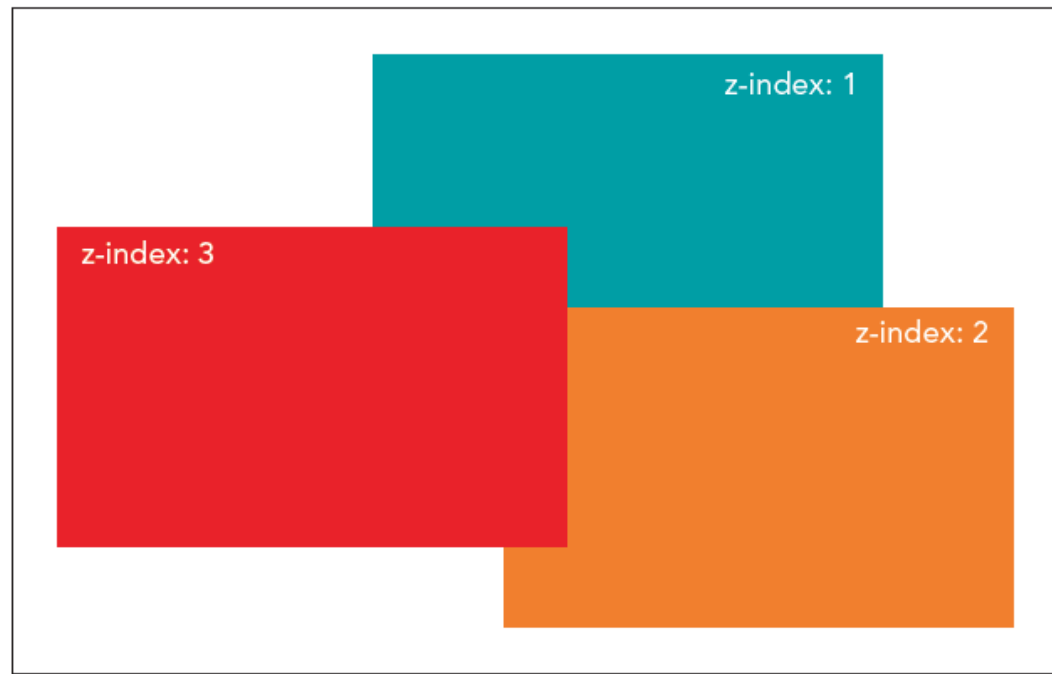
Figure 3-62 Clipping an image



Stacking Elements - 1

`z-index: value;`

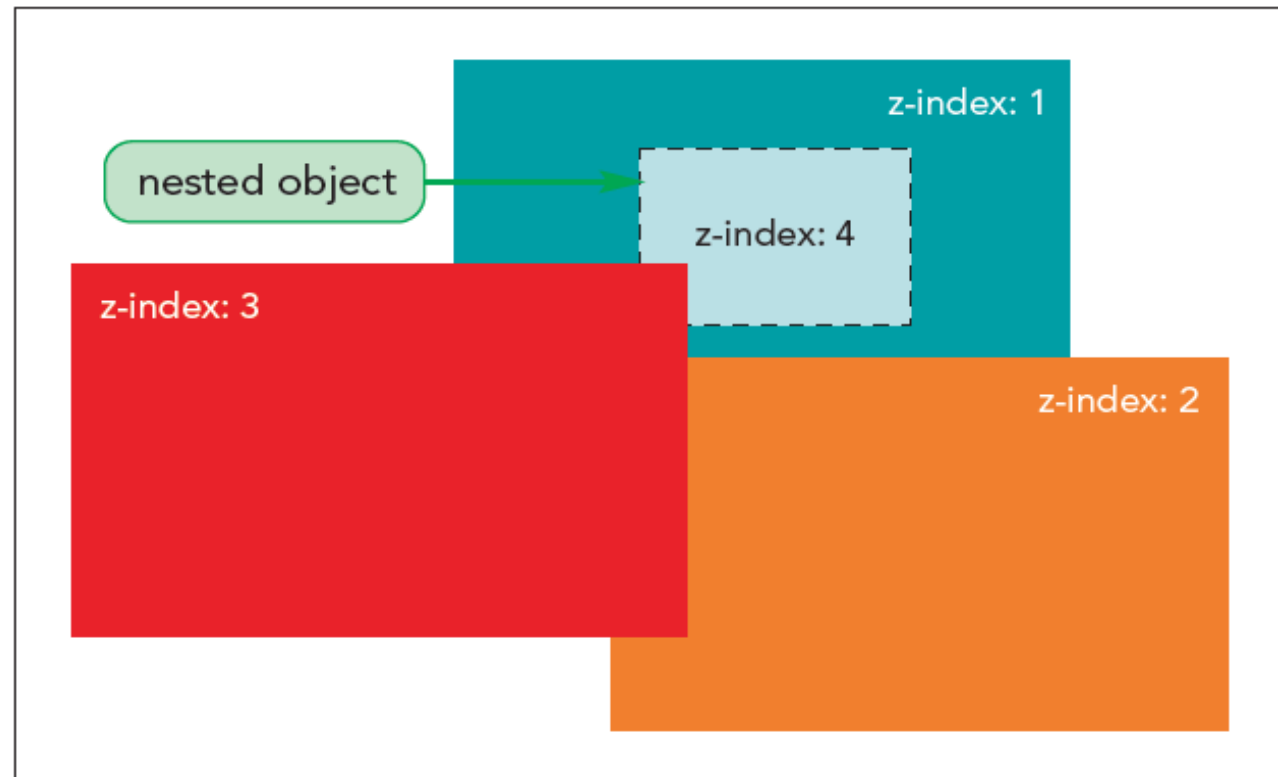
Figure 3-63 Using the z-index property to stack elements



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Stacking elements - 2

Figure 3-64 Stacking nested objects



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Summary

Session 3.1:

- ☐ Reset style sheet
- ☐ Page layout designs
- ☐ Block element
- ☐ Floating element
- ☐ Container collapse

Session 3.2:

- ☐ Grid-based layout
- ☐ Layout grid
- ☐ Grid formatting
- ☐ CSS grid styles

Session 3.3:

- ☐ Positioning styles
- ☐ Relative positioning
- ☐ Absolute positioning
- ☐ Overflow content



End of Lecture Slides

