

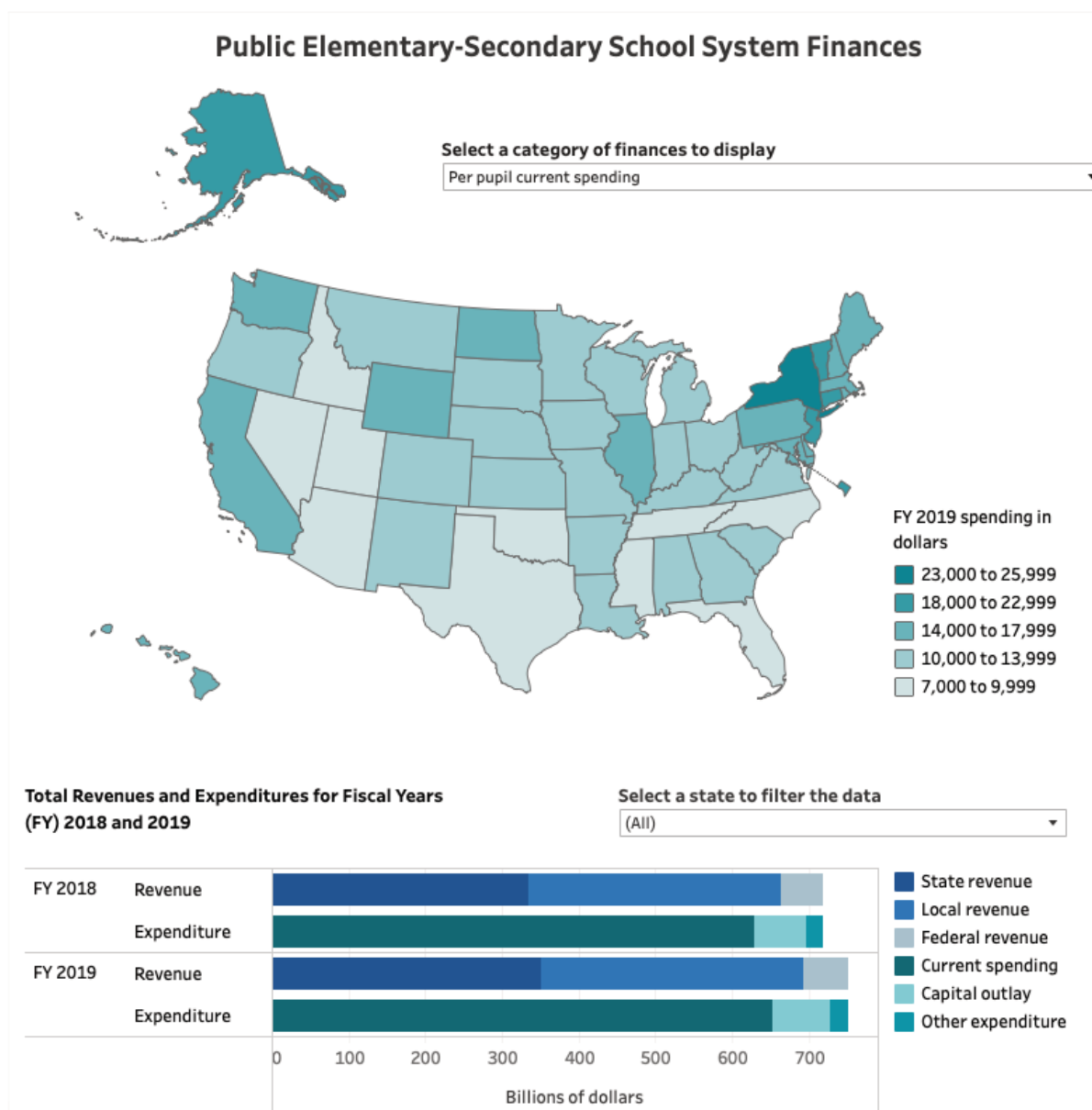
A decorative graphic consisting of a grid of light blue circles is positioned behind the main title. The circles are arranged in three rows and several columns, with some circles partially obscured by the text.

visualisation design for the web with chart JS

PART 1

But why not PDFs?

Key advantages and use cases of interactive data visualisation



Almost all data agencies employ interactive, scalable data visualisation elements as part of their online data dissemination efforts. For an organisation such as DCS, there are several key advantages that interactive applications offer in contrast to their non-interactive counterparts.

Key advantages and use cases of interactive data visualisation

1. The Internet is increasingly becoming the primary data consumption channel for most regular data users and most data is accessed on Mobile :

Visualising your data on the web enables you to integrate into your value addition process, a number of aesthetic and functional elements that increase the value and the usability of your data.

2. Interactivity helps the user to analyse data better and understand trends and patterns easily.

When different elements of your visualisation is not permanently affixed to one particular time series, scale or layout, the user is able to view the data in a way that is more conducive to their particular need and understanding

3. The average online data consumer is conditioned to expect an interactive experience

Data visualisation that utilises interactivity, animation and value added graphic elements is a user experience that online data users, particularly young audiences are used to. Presenting data in this manner will grab and retain the attention of data users and entice them to return to the website frequently.

4. Large documents can be cumbersome, and most data consumers appreciate an at-a-glance, bird's eye view of data

Most data consumers will prefer to use a dashboard, rather than sift through a document, making crucial data available in easily accessible forms will entice data users to make use of data much more frequently

5. Updating is much more efficient than remaking

An image based visualisation will require the re-graphing and re-drawing of design elements whenever the data is updated, whereas dynamic, interactive DV elements will automatically update the visual elements according to the data fed into the backend. Updating an interactive tool can be as easily as updating a few lines of code.

Key advantages and use cases of interactive data visualisation

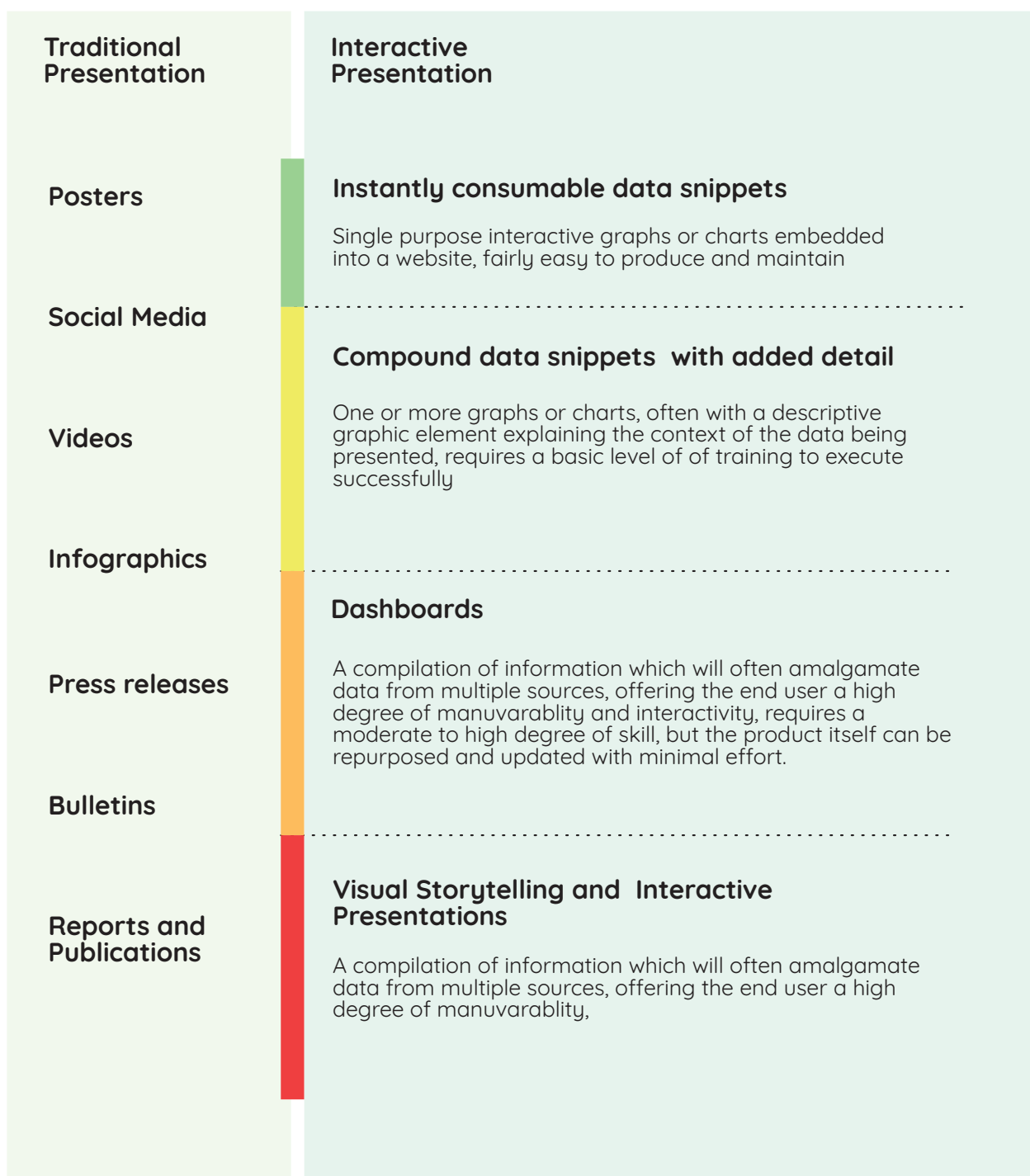
1. That which is interactive, is searchable

Interactive DV objects are indexable and searchable, which means that search algorithms and filters will pick up information from your visualisations, enabling the end users to find them easily

2. Data can be boring, unless we present it in a refreshing way.

One of the key challenges confronted by an organisation such as DCS is attracting and retaining newer, younger audiences to the organisation's website. In order to do so, otherwise mundane tables and reports will need to be presented in ways that are much more pleasing to the eye, exciting to use and convenient to access and browse.

Identifying the types of usage and layering use cases



Basic Chart.js resources for DCS

1. Chartjs.org

<https://www.chartjs.org/docs/latest/getting-started/>

Recommended for new users of chart.js to familiarise themselves with the chart.js eco system and create their first chart.js based data visualisation before you proceed with the rest of this publication

2. Chart.js templates and examples from Nidahas.

http://docs.nso.gov.lk/nidahas/Download_Assets.html

Link and resources are accessible from the download assets page under Chart.js Resources with DCS Brand Styling

Chart.js Resources with DCS Brand Styling

<div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <div style="text-align: center; font-weight: bold; color: #e91e63; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">1</div> <p style="margin-top: 10px;">Download sample charts</p> <ul style="list-style-type: none"> line_graph.js butterfly_graph.js doughnut_chart.js pie_chart.js grouped vertical bar_graph.js horizontal bar_graph.js radar_graph.js <p style="margin-top: 20px;">A repository of pre-written code for commonly used visualisations.</p> </div>	<div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <div style="text-align: center; font-weight: bold; color: #e91e63; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">2</div> <p style="margin-top: 10px;">Stylesheet (Download or Embed)</p> <p style="margin-top: 10px;">Download .css</p> <p style="margin-top: 20px;">A master stylesheet that contains all the branding and design elements for visualisations and other related online publishing items</p> </div>	<div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <div style="text-align: center; font-weight: bold; color: #e91e63; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">3</div> <p style="margin-top: 10px;">Samples and Code Guide (Live preview)</p> <p style="margin-top: 10px;">Click to View</p> <p style="margin-top: 20px;">A step by step guide with example code and sample visualisations for learners of chart.js</p> </div>
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Starting your first chart.js project

Find your resources at : <http://docs.nso.gov.lk/nidahas/chartjs.html>

1. Set up a working folder



<Any file name>.html

A blank html file

If working offline only *

dcs_graph_styles.css

Contains all the branding and visual design added onto your graphs and your document

chartjs-plugin-datalabels.js

A plugin for chart.js to display the data as an overlay on top of the graph

Chart.min.js

The chart.js library itself

jquery-3.5.1.min.js

A javascript library for additional functionality required for operating chart.js successfully

rlight.ttf
rmedium.ttf } Fonts

Files can be copied off nidahas/Download_Assets *

These files are only necessary as fallbacks when an internet connection is not available

Starting your first chart.js project

Your basic .html file

```

<!doctype html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>My Page Title</title>
    <meta name="description" content="My Page Description">
    <link rel="stylesheet" href="css/styles.css?v=1.0">
  </head>
  <body>
    <script src="js/scripts.js"></script>
  </body>
</html>

```

Create in a text editor and save as a .html file

Paste the following into your head section

```

<script src="http://docs.nso.gov.lk/nidahas/assets/dvtools/chartjs/dcs_graph_styles.css"></script>
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.4/jquery.min.js"> </script>
<script src="https://cdn.jsdelivr.net/npm/chart.js@2.8.0"> </script>
<script src="https://cdn.jsdelivr.net/npm/chartjs-plugin-datalabels@0.7.0"> </script>

```

If working offline, also paste the following into your head section
(remove when uploading the work into the website)

```

<link rel="stylesheet" href="dcs_graph_styles.css">
<script src="jquery-3.5.1.min.js"> </script>
<script src="Chart.min.js"> </script>
<script src="chartjs-plugin-datalabels.js"> </script>

```


Your first chart.js chart

Copy and paste the following into your html file

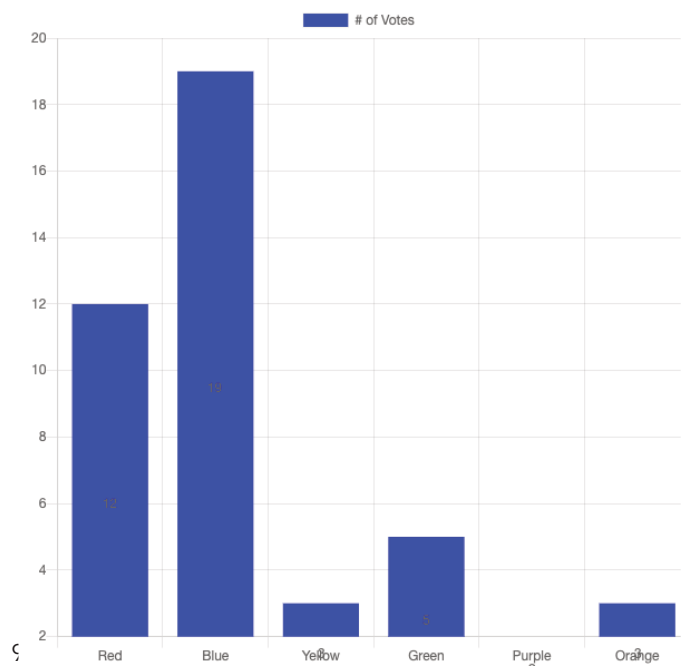
```
<canvas id="myChart" width="400" height="400"></canvas>
```

This script looks for the canvas named in the bracket and renders the chart onto the canvas

```
<script>
var ctx = document.getElementById('myChart').getContext('2d');

var myChart = new Chart(ctx, {
  type: 'bar',
  data: {
    labels: ['Red', 'Blue', 'Yellow', 'Green', 'Purple', 'Orange'],
    datasets: [{
      label: '# of Votes',
      data: [12, 19, 3, 5, 2, 3],
      backgroundColor: "blue",
      borderWidth: 1,
    }]
  },
  options: {
    scales: {
      y: {
        beginAtZero: true
      }
    }
  }
});
</script>
```

End result



DCS brand formatting for your graph

In order to add your formatting to a chart.js object, place your canvas inside this wrapper

```

<div class="dcsgraph" id="graph">

<table class="graphheader">
<tbody>
<tr>
<td class="accent" rowspan="2"> </td>
<td class="graphtitle"> Graph Heading </td> _____ Graph Heading
</tr>
<tr>
<td class="graphtitle_2" id="lastupdated2"> Graph Subheading </td> _____
</tr>
</tbody>
</table>

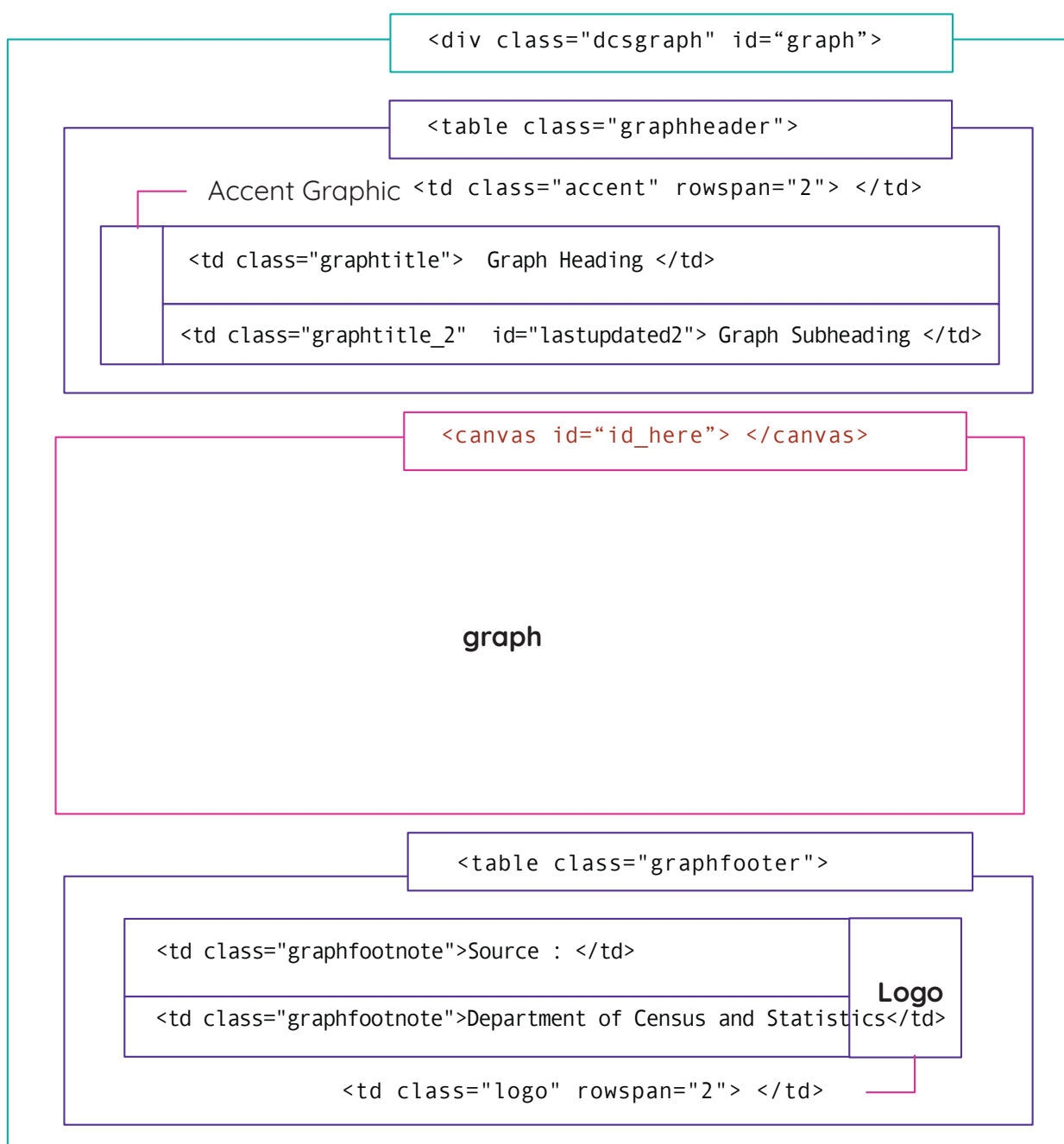
<canvas id="id_here"> </canvas>
<script src="<link here>"</script>

<table class="graphfooter">
<tbody>
<tr>
<td class="graphfootnote">Source : </td> _____ Canvas element for chart.js file
<td class="logo" rowspan="2"> </td>
</tr>
<tr>
<td class="graphfootnote">Department of Census and Statistics</td>
</tr>
</tbody>
</table>

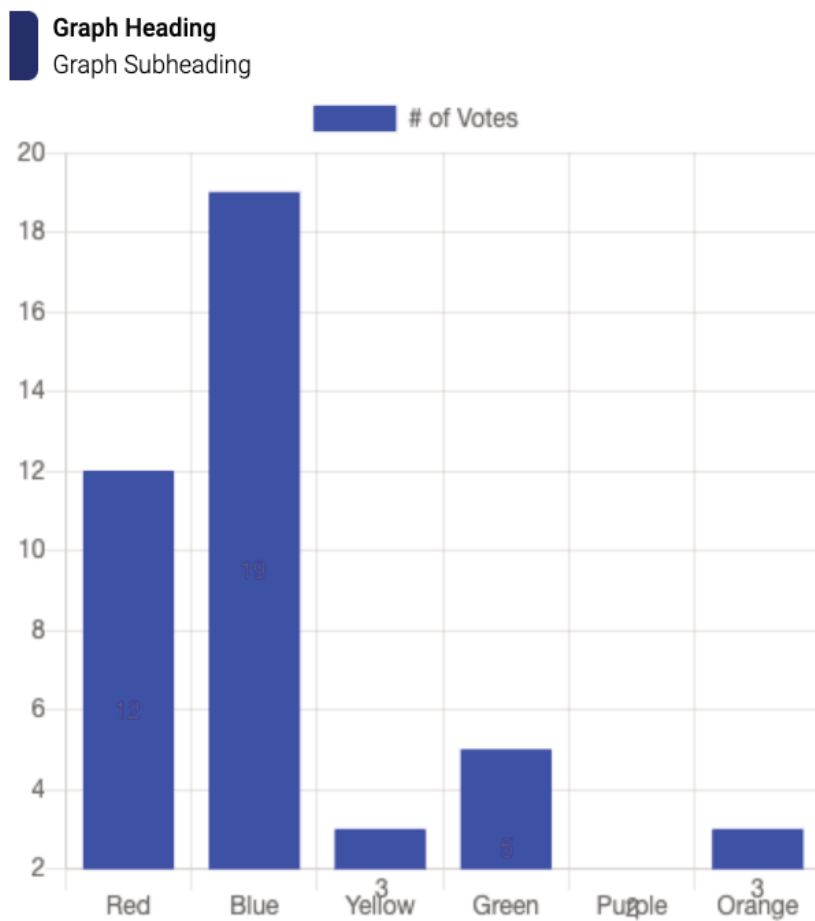
</div>

```

Structure of the container



End result



Source :
Department of Census and Statistics

Storing your graph outside your html file

This entire script can be saved separately as a .js file

```
var ctx = document.getElementById('myChart').getContext('2d');

var myChart = new Chart(ctx, {
  type: 'bar',
  data: {
    labels: ['Red', 'Blue', 'Yellow', 'Green', 'Purple', 'Orange'],
    datasets: [{
      label: '# of Votes',
      data: [12, 19, 3, 5, 2, 3],
      backgroundColor: "blue",
      borderWidth: 1,
    }]
  },
  options: {
    scales: {
      y: {
        beginAtZero: true
      }
    }
  }
});
```

Once the script has been saved in a separate location, provide the link to the file with a script tag, below the canvas tag as follows

```
<script src="<link here>"></script>
```

Samples of these script files can be located at [nidahas/Download_Assets](#)

Formatting and layout design

Resizing your graph

To resize your graph, add `style="width:xx; height;xx"` to your div wrapper

```
<div class="dcsgraph" id="graph">
```

```
<div class="dcsgraph" style="width:200px; height:200px" id="graph">
```

Placing text next to your graph

To place text next to your graph, place the div containing your graph inside a **partition element**

```
<ul class="partition">
```

```
<li>
```

```
Your graph with its wrapper goes here
```

```
</li>
```

```
<li>
```

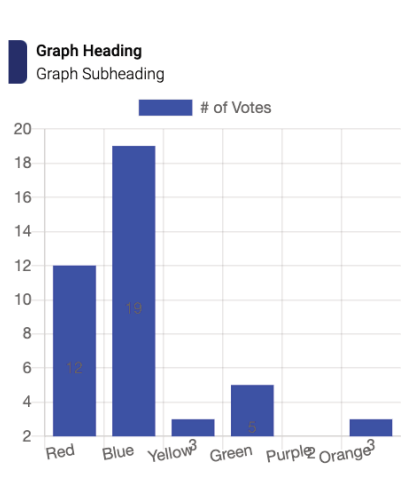
```
Your text goes here
```

```
<h1> For headings </h1>
```

```
<p> For paragraphs </p>
```

```
</li>
```

```
</ul>
```



Title

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus at nisi mollis, pretium mi et, auctor odio. Fusce ornare dui quis sem pretium, et ultrices diam varius. Quisque feugiat ante quam, eget bibendum nulla gravida in. Integer egestas vel arcu sed luctus. Quisque vestibulum porttitor augue. Nulla a magna justo. Vivamus accumsan dui sapien, quis bibendum tellus varius at. Suspendisse potenti. Suspendisse odio ante, posuere a pulvinar iaculis, facilisis quis neque. Praesent in scelerisque augue. Nam vel auctor metus. Cras maximus mauris at cursus mollis. Proin vestibulum vehicula felis ut imperdiet. Sed sem lorem, aliquam eget nunc vel, dictum efficitur enim. Fusce lectus neque, venenatis vitae felis eu, finibus ultricies sapien. Nulla vitae orci accumsan, tincidunt purus ac, ultrices massa. Duis ut vulputate est.

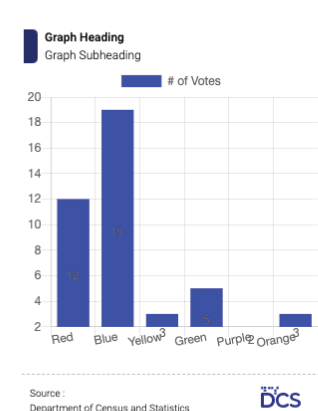
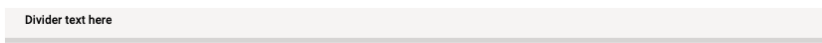
Source:
Department of Census and Statistics



Placing a body divider in your document

To place a body divider in your document, use the following tag

```
<div class="divider"> Divider text here </div>
```



Title

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus at nisi mollis, pretium mi et, auctor odio. Fusce ornare dui quis sem pretium, et ultrices diam varius. Quisque feugiat ante quam, eget bibendum nulla gravida in. Integer egestas vel arcu sed luctus. Quisque vestibulum porttitor augue. Nulla a magna justo. Vivamus accumsan dui sapien, quis bibendum tellus varius at. Suspendisse potenti. Suspendisse odio ante, posuere a pulvinar iaculis, facilisis quis neque. Praesent in scelerisque augue. Nam vel auctor metus. Cras maximus mauris at cursus mollis. Proin vestibulum vehicula felis ut imperdiet. Sed sem lorem, aliquam eget nunc vel, dictum efficitur enim. Fusce lectus neque, venenatis vitae felis eu, finibus ultricies sapien. Nulla vitae orci accumsan, tincidunt purus ac, ultrices massa. Duis ut vulputate est.

Source:
Department of Census and Statistics

