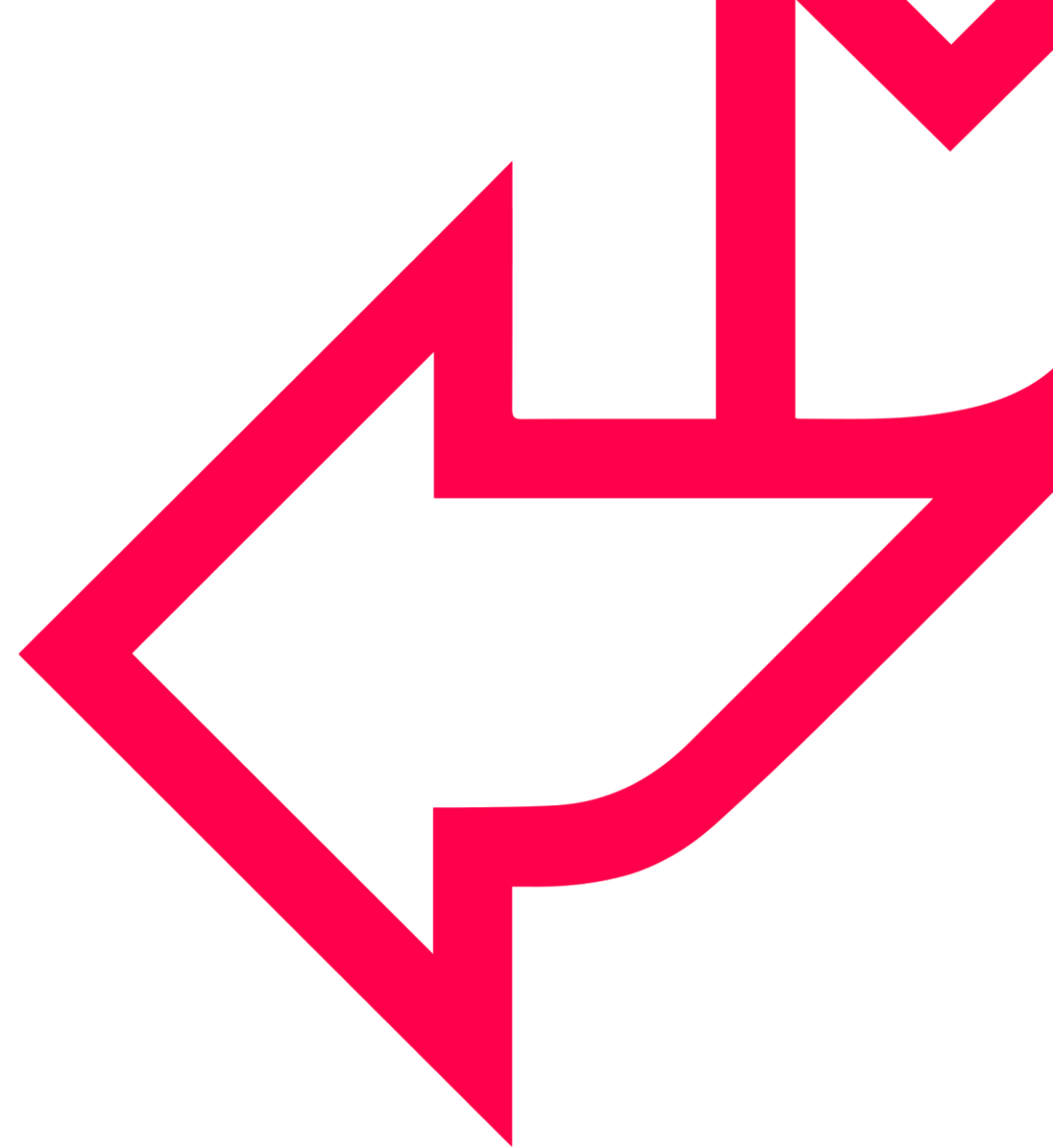




Web Fundamentals

Responsive Web Design (Rwd)





LEARNING OBJECTIVES

- Understand 'Mobile First' and 'Responsive Web Design'
- Be able to apply RWD principles
- Be able to use Media Queries
- Understand and implement grid systems



QA Responsive Web Design

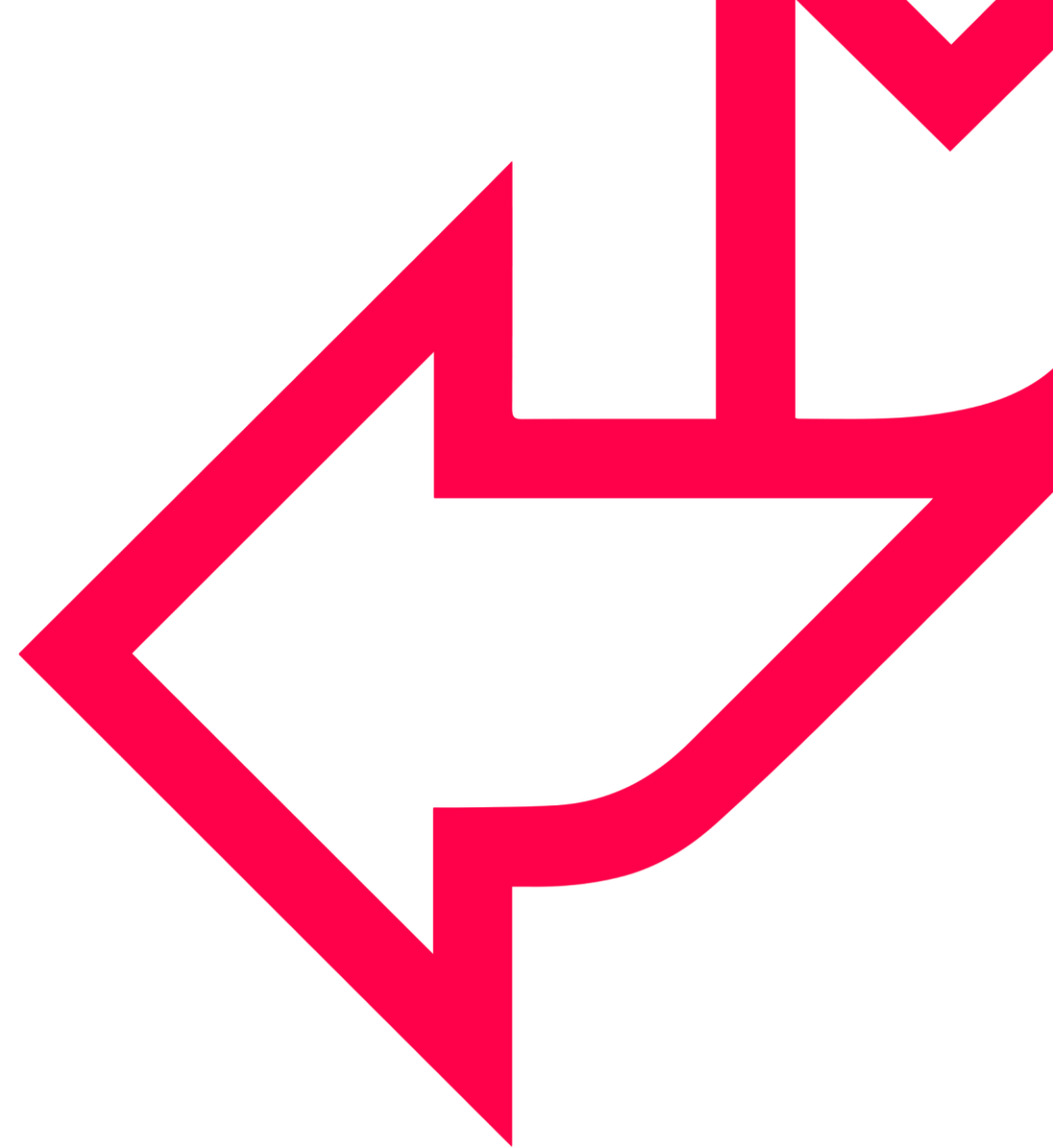
- Mobile First and Responsive Design
- Viewports
- Media Queries
- Grids





Mobile First and Responsive Web Design

Responsive Web Design



Mobile First

UI design idea first coined by Luke Wroblewski in 2011

- Encourages UI to be designed for a mobile device before a large screen
- Helps to identify what the most important content is
- Ensures that this content is displayed prominently on a mobile device

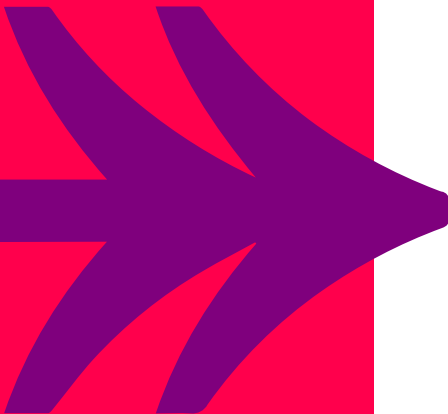
Why 'Mobile First'?

- Prepares you for the explosive growth and new opportunities emerging on mobile today
- Forces you to focus and prioritise your products by embracing the constraints inherent in mobile design
- Allows you to deliver innovative experiences by building on new capabilities native to mobile devices and modes of use

Taken from Mobile First, L Wroblewski, P1



RESPONSIVE WEB DESIGN



Pioneered by Ethan Marcotte in 2010

Ensures that web pages render well regardless of device/screen/window size

- Adapts the layout by using fluid, proportion-based grids, flexible images, and media queries
 - Fluid grid concept requires sizing to be in relative units (percentages rather than pixels or points)
 - Flexible images sized in relative units
 - Media queries allow different rules to be applied, usually dependent on width of screen available

Only uses HTML and CSS

QA **Content First - Manipulate**

RWD is more than changing layouts

Media queries do not just change layouts

- Allow designers to manipulate content dependent on viewport size and device type

Make sure main content is visible on phone when user views homepage

- Hamburger navigation, move ads down, etc.

Changing content is common

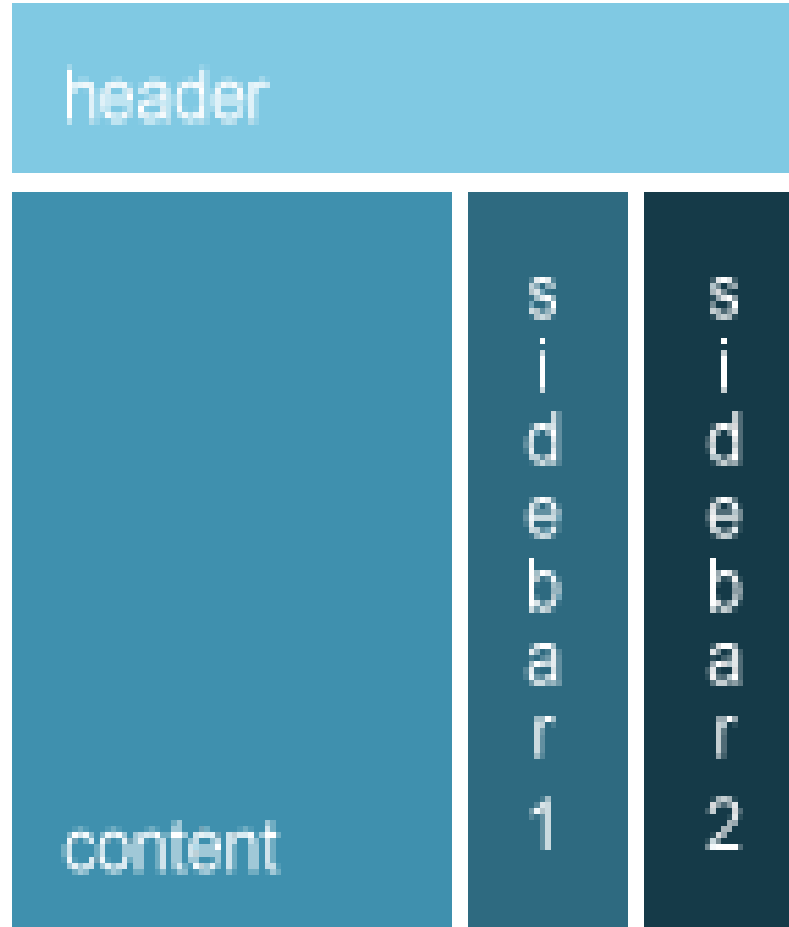
- Lower resolution videos for small screens, etc.

Removing content completely is last resort

General rules for manipulating content:

- **Reorder**
- **Reposition**
- **Replace**
- **Remove (last resort)**

QA Responsive is not just smaller text



- Responsive development is about re-envisioning content
- Relative sizing can make content too big on mobile devices and too small on desktop-sized screens and above

The Viewport

User's visible area of the page

Varies from device to device

- Small on a mobile phone, larger on a full-size screen

Setting the viewport

- Done in a meta tag with the head of the HTML page
- Has to be included for responsiveness to work

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

Size content to the viewport

- Users should only scroll vertically – never horizontally
- Content should not rely on a particular viewport size
- Media queries should be used to apply different styles on different sized screens

QA **max-width**

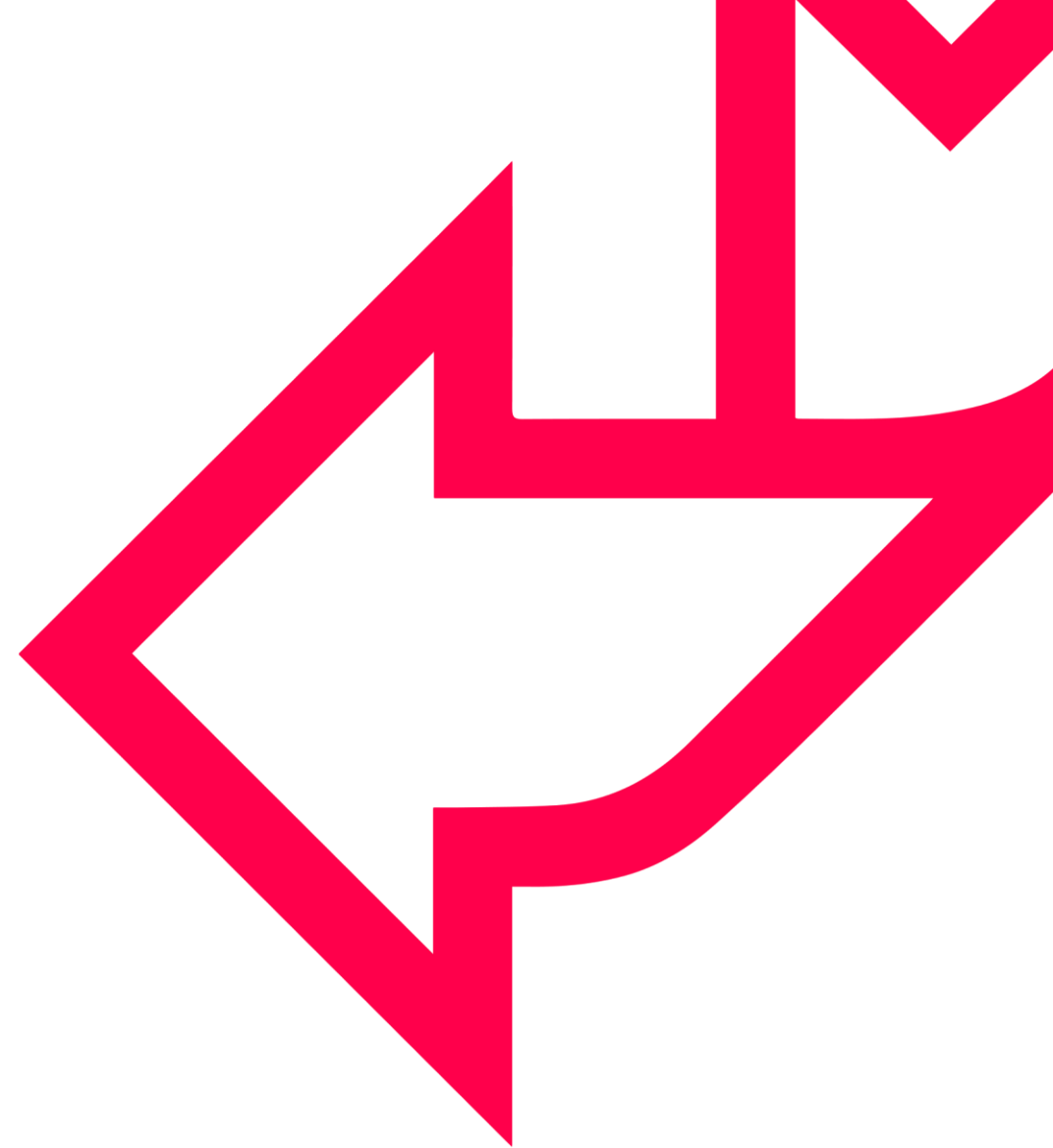
- Will solve most problems with images
- Sets the maximum width of a given element (if % it is that of the parent element)
- Elements will not appear wider than the maximum specified for the element

```
img {  
  max-width: 100%  
}  
  
img.biggest {  
  max-width: 300px  
}
```



Media Queries

Responsive Web Design



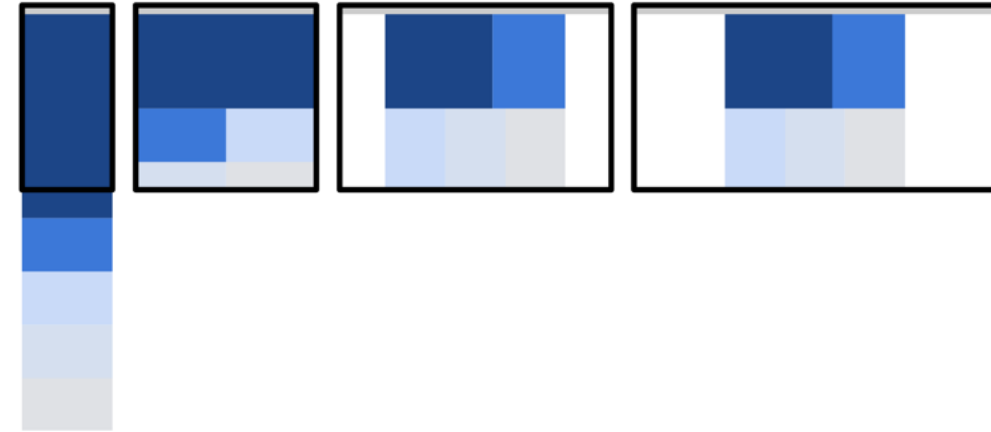
QA Media Queries

Modify the layout of your site based on different criteria.

Same layout not necessarily appropriate for every device.

Might have:

- Single column on phone
- Two columns on tablet
- Three columns on desktop
- Etc.



```
@media (max-width: 480px) {  
    /* layout for phones */  
}
```

```
@media (max-width: 720px) {  
    /* layout for tablets */  
}
```

Match Breakpoints to Content

- **Devices are constantly changing**
 - Viewports getting bigger and smaller
 - Pixel density, pixel shape display quality
- **Designers should not be forced to make change every time new viewport appears**
- **Follow rules opposite**

General rules for creating breakpoints in content

- Start small
- Add major breakpoints
- Add minor breakpoints if necessary
- Optimise for reading: 70-80 characters per line

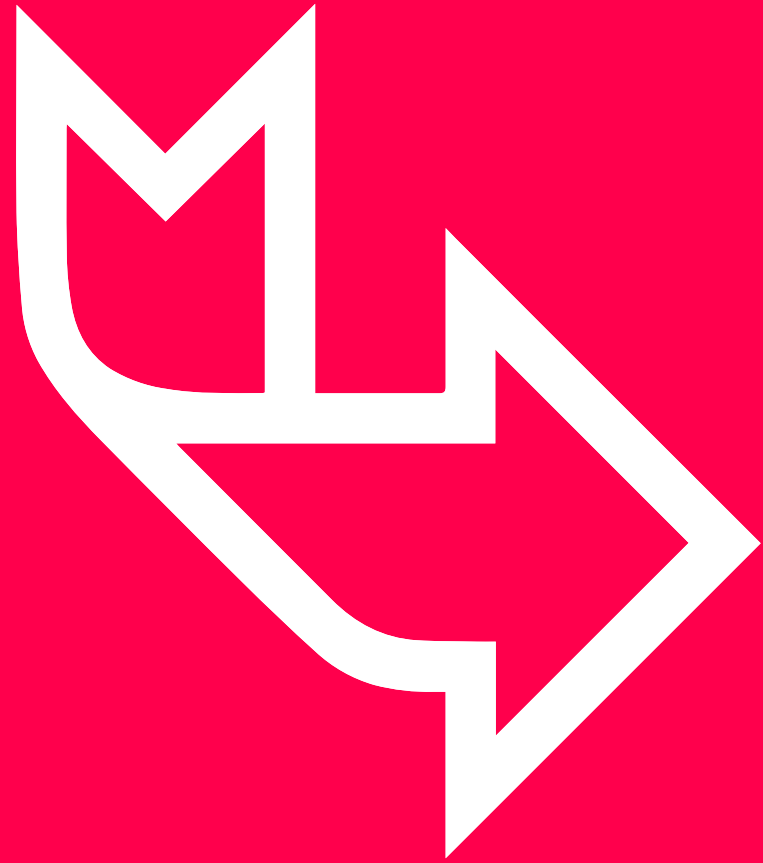
QA Mobile First Media Queries

- Look at the minimum width of a device to display content in a particular way instead
- No fixed rule about whether to include media queries inline or use a separate file
- Might want to consider using ems or rems

```
/* small by default */

@media (min-width: 480px) {
    /* medium */
}

@media (min-width: 720px) {
    /* large */
}
```



Quick Lab Chapter 10 – Media Queries

Create some media queries to make a page adapt to the width available.