LESSON 9



Responsive Design

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HTML & CSS

LESSON 9

Responsive Design

The viewport tag, mobile-first, media queries, fluid sizes with clamp, and responsive ima

The Viewport Meta Tag

index.html

```
<head>
  <meta charset="UTF-8">
  <meta name="viewport"
        content="width=device-width, initial-scale=1">
</head>
```

- Without this tag, phones pretend to be a wide desktop screen and shrink your page. Always …
- More than half of all web traffic comes from phones, so responsive design is not optional.

01

Mobile-First



- phone — base CSS, 1 column
- ≥ 640px — 2 columns
- ≥ 1024px — sidebar + 3 columns

02

Media Queries

style.css

```
.page { display: grid; gap: 1rem; }      /* phone: 1 column */

@media (min-width: 640px) {
  .page { grid-template-columns: 1fr 1fr; }
}
@media (min-width: 1024px) {
  .page { grid-template-columns: 240px 1fr 1fr; }
}
@media (prefers-reduced-motion: reduce) { * { animation: none; } }
```

- A media query applies rules only when a condition is true, usually a minimum screen width …
- Choose breakpoints where your content starts to look wrong, not for specific devices.

03

Fluid Sizes with clamp

style.css

```css
h1 {
  font-size: clamp(1.75rem, 4vw + 1rem, 3.5rem);
}
.container {
  width: min(100% - 2rem, 1100px);
  margin-inline: auto;
}
section { padding-block: clamp(2rem, 6vw, 5rem); }
```

- clamp sets a minimum, a preferred size that grows with the screen, and a maximum. Headings …
- Combine percent widths with max-width so content never stretches too wide on big monitors.

04

Responsive Images

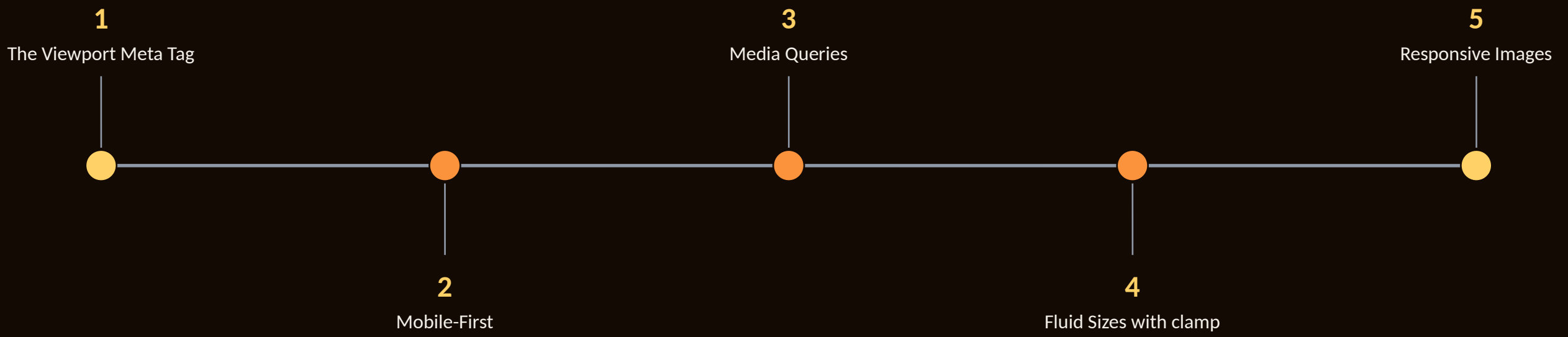
index.html

```
<!-- CSS: img { max-width: 100%; height: auto; } -->
<img src="bamyan-800.webp"
     srcset="bamyan-400.webp 400w, bamyan-800.webp 800w, bamyan-1600.webp 1600w"
     sizes="(min-width: 1024px) 50vw, 100vw"
     alt="Bamyan valley">
<picture>
  <source media="(max-width: 600px)" srcset="hero-square.webp">
  <img src="hero-wide.webp" alt="Kabul skyline">
</picture>
```

- max-width one hundred percent stops images from overflowing. srcset and sizes let the …
- The picture element can switch to a completely different crop for small screens.

05

Lesson Map


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The Viewport Meta Tag
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Mobile-First
3
Media Queries
4
Fluid Sizes with clamp
5
Responsive Images

Sources and Further Reading

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style.css

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Thank you for watching

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