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Welcome to this session:

Task Walkthrough 1-4

The session will start shortly...

Questions? Drop them in the chat.
We'll have dedicated moderators
answering questions.

Safeguarding & Welfare

We are committed to all our students and staff feeling safe and happy; we want to make sure there is always someone you can turn to if you are worried about anything.

If you are feeling upset or unsafe, are worried about a friend, student or family member, or you feel like something isn't right, speak to our safeguarding team:

Ian Wyles
Designated Safeguarding Lead

Simone Botes

Nurhaan Snyman

Rafiq Manan

Ronald Munodawafa

Tevin Pitts

Scan to report a safeguarding concern

or email the Designated Safeguarding Lead:
Ian Wyles
safeguarding@hyperiondev.com

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- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(Fundamental British Values: Mutual Respect and Tolerance)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Academic Sessions. You can submit these questions here: **Questions**

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- For all **non-academic questions**, please submit a query: ***www.hyperiondev.com/support***

- **Report a safeguarding incident: *www.hyperiondev.com/safeguardreporting***

- We would love your feedback on lectures: ***Feedback on Lectures***

- Find all the lecture **content** in your **Lecture Backpack** on GitHub.

- If you are hearing impaired, please kindly use your computer's function through Google chrome to enable captions.

What is the purpose of a media query in CSS?

A. It formats media files on a webpage.
B. It applies styles based on device or screen characteristics, such as width.
C. It queries a database to retrieve media data.
D. It adjusts the brightness of a webpage based on screen settings.

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What does the flex-direction property in Flexbox do?

A. It defines the space between flex items.
B. It sets the size of each flex item.
C. It defines the main axis along which flex items are laid out.
D. It controls the padding inside each flex item.

Learning Outcomes

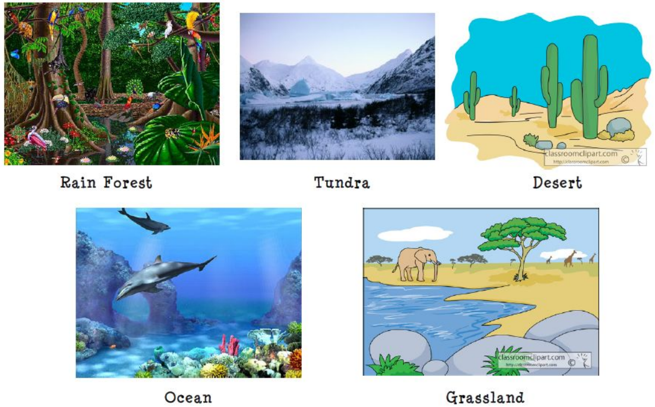
- **Create responsive layouts** using CSS grid or flexbox to dynamically adjust element positioning across various screen sizes.
- **Implement breakpoints** in CSS to change styling based on screen dimensions, ensuring the design remains functional on different devices.
- **Use CSS properties** like gap, row-gap, and column-gap to control the spacing between items in grid or flexbox layouts.
- **Develop responsive strategies** to hide or replace content when the layout becomes impractical on smaller screens.
- **Test and assess the responsiveness of web designs**, ensuring they maintain usability across multiple devices and screen sizes.

Lecture Overview

→ Presentation of the Task
→ Introduction to Responsive Design
→ Design Layouts
→ Responsive Images
→ Task Walkthrough

Responsive Design Task

Create a responsive webpage featuring a grid layout that showcases different animal habitats. As the screen size changes, the layout will adjust to maintain usability and aesthetics. When the page becomes too small for the grid layout, the grid will be replaced by an image of the animal habitats.



Responsive Design

A method to create web pages that adapt to various screen sizes and orientations while maintaining functionality and readability.

- Websites may become **cluttered, distorted or unusable** when viewing them on **smaller screens** than they were designed for.
- This causes many **accessibility challenges**, limiting users who don’t have access to larger screens and who may have impairments.
- To solve this, we use responsive design to adjust pages to screen size, by detecting **size and orientation**.
- We use HTML and CSS along with **flexible layouts, media queries and responsive units**.

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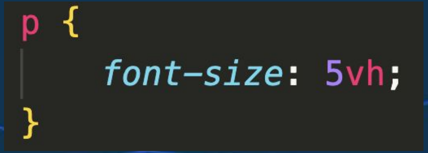
Responsive Design

- **Key components:**
  - **Flexible Design Layouts:** Resize and reorganise themselves to fit screen dimensions.
  - **Responsive Images:** Scale or switch based on the screens size or device type.
  - **Media Queries:** CSS rules that apply styles depending on the viewport's characteristics such as screen width or resolution.

Responsive Units

- **Viewport:** The visible area on a device's screen. It changes across devices.
- **Types of Units:**
  - **Absolute Units:** Fixed units like pixels (px) and centimeters (cm)
  - **Relative Units:**
    - **em:** relative to the parent element's font size.
    - **rem:** relative to the root element's font size.
    - **vh and vw:** percentages of the viewport's height or width.
    - **%:** relative to the parent element.

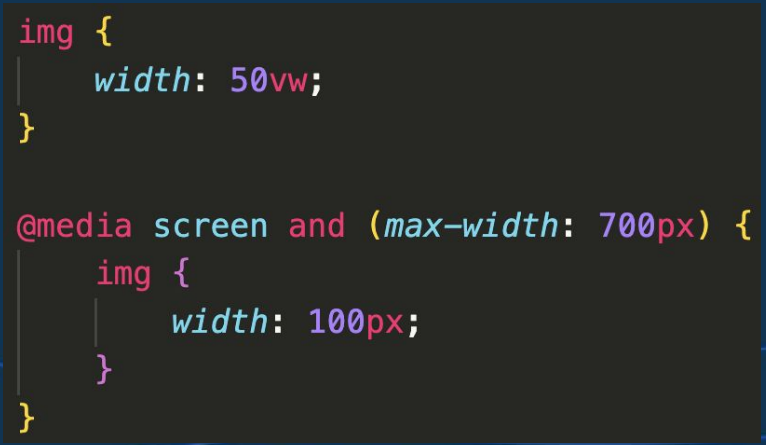


```
p {
    font-size: 5vh;
}
```

Media Queries

Allow developers to apply different styles based on the screen's characteristics (width, resolution).

- There are many types of media that we can create designs for: **all, screen, print, speech.**
- **Breakpoints:** defined points at which layouts adjusts.



```css
img {
    width: 50vw;
}

@media screen and (max-width: 700px) {
    img {
        width: 100px;
    }
}
```

Flexible Design Layouts

- **Grid Layout:**
  - Uses rows and columns for layout, creating a structured, multi-dimensional grid.
  - Commonly consists of 12 columns, allowing for versatile placement of elements.
- **Flexbox Layout:**
  - Simplifies the alignment of elements within a container, using flexible boxes and works in a single direction (row or column).
    - **flex-direction:** specifies the direction
    - **flex-wrap:** allows items to wrap if they overflow the container.
    - **flex:** controls the amount of available space an item occupies.

Responsive Images

- We usually use **scaling** with percentage-based widths to make images responsive *i.e width: 100%; height: auto;*
- However, larger images slow load times on smaller devices.
  - Instead, use *<picture>* tag with *srcset* and media queries to serve different image versions based on the viewport size.

Which CSS property allows you to adjust the spacing between items in a CSS grid or flexbox layout?

A. display
B. row-gap
C. position
D. padding

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At what point should you introduce a breakpoint in responsive design?

A. When the page looks too wide on a large screen.
B. When the layout no longer functions well or becomes cluttered at a specific screen width.
C. When you want to change the font colour on certain devices.
D. Only when designing for mobile screens.

Responsive Design Task

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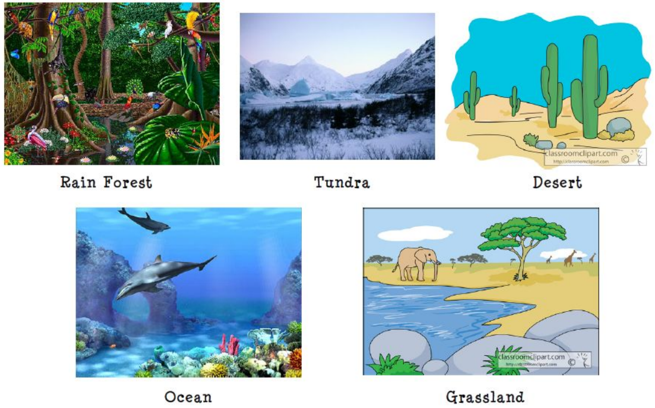

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Q & A SECTION

Please use this time to ask any questions relating to the topic, should you have any.

Thank you for attending

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