

DECO 7180

DESIGN COMPUTING STUDIO I

4E FINAL REPORT

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INTRODUCTION

Australia is home to a vast and diverse array of wildlife that locals and tourists alike aim to view and appreciate. Queensland, with approximately 50% of its landmass being in the tropical zone, is home to a varied amount of flora and fauna (The State of Queensland, 2017). In addition to its rich wildlife, Queensland also boasted rich Aboriginal culture prior to British colonisation. With the native peoples having their own languages, cultures, beliefs and ways of life. Only around 50 Aboriginal and Torres Strait Islander languages remain of the more than 100 dialects that were once spoken (The State of Queensland, 2022).

Developing an appreciation and understanding towards Queensland's culture, flora and fauna can lead to a more welcoming and inclusive community as a whole. The current digital age we live in presents a prime opportunity to foster this appreciation.

Instilling appreciation for culture and wildlife should start at a young age, as this can have a lifelong impact on children's cultural awareness. Leveraging digital tools can help promote this learning and broaden children's perspective in an engaging way.

With this context in mind, our team has been tasked to explore how data from multiple datasets can be presented, combined, and visualised in a meaningful and relevant way through an interactive web application. The outcome was the creation of a web application titled "Wild Wonders," a game application designed to educate children aged 5-12 on Queensland wildlife.

Wild Wonders is a website that combines education, cultural promotion, and nature conservation. Our mission is to showcase the beauty of Queensland's wildlife, inspire children's interest, and promote Australia's First Nations culture and languages. We provide a safe and kid-friendly learning platform through visual, audio and interactive hand-on content. We do this through multimedia resources like fun quizzes, puzzles, sound matching and using plenty of bright colours to keep children engaged.

This document aims to outline the cumulative work done over 3 months by team Need A Day Off (N.A.D.O). In the following chapters we go over our design process covering research, ideation, design, prototyping and development of our application.

INTRODUCTION

About Us - N.A.D.O.

N.A.D.O is a team of 5 individuals who come from varying backgrounds and expertise. Each member brought valuable skills to the table ranging from design, technical and project management. The first step in the team project was obviously to form a team and to agree upon a charter for group work. We were then able to effectively complete our team charter, set up a platform and standard for communication. The table below breaks down each individual team members strengths and limitations:

Member	Strengths	Limitation	Responsibilities
 Hezekiah	<ul style="list-style-type: none">Technical experience (Full stack)MediationTeamwork/team experienceIdea generation	<ul style="list-style-type: none">OrganisationDelegationDrawing	<ul style="list-style-type: none">Spearhead technical development of projectSupport design work
 Ann	<ul style="list-style-type: none">Documentation organisationJournalism backgroundRelevant work experienceTeamwork experience	<ul style="list-style-type: none">Time/Schedule management	<ul style="list-style-type: none">Responsible for documentation organisationClarity and structure in project materials
 Jasmine	<ul style="list-style-type: none">CommunicationTeamwork and cooperationDesignOrganisation	<ul style="list-style-type: none">Backend codingPersonal time management	<ul style="list-style-type: none">LeaderTask delegation and oversightPlanning meeting timesDocument organisation
 Yali	<ul style="list-style-type: none">CodingCommunicatingTeam corporation	<ul style="list-style-type: none">OrganisationDrawing	<ul style="list-style-type: none">Lead technical developmentSupport design work
 Fanqi	<ul style="list-style-type: none">DesignDrawingCommunicatingTeam corporation	<ul style="list-style-type: none">Coding	<ul style="list-style-type: none">Visual communication and webpage design (front end)Support development

PROJECT REQUIREMENTS

Success criteria

As previously mentioned our team was tasked with designing and developing an interactive web application that uses data from various data sets in a novel way. We selected flora and fauna as our domain of focus and were expected to adopt a user-centred design process in the development of our concept. Our team was given the creative freedom to work on concepts that were of interest to us with the following conditions in place:

- Access three (3) datasets via API endpoints (one of which being from the links provided by the teaching team)
- At least three (3) key interactive and distinct functionalities that will use dataset(s)

Additional requirements for our team included the timely submission of the following mandatory project deliverables.

- Team Charter
- Minimum Viable Product (MVP)
- Design Proposal
- Final Website Implementation

These deliverables, although mandatory, were essential to our team's successful completion of the project.

Our primary objective is to help children learn about Queensland's wildlife through multimedia content. We would like to achieve this by including animal data, sounds, related cultural stories, and interactive games that will help the children test what they have learned. Our time frame for ideation, design and development is 9 weeks. Our goal is to ensure that at least 80% of children who use our website can understand basic animal information and Indigenous culture through these multimedia content and interactive games. Another criterion for success is to further enhance engagement with the games we create and ensure at least 70% of the children can successfully complete the game and receive accurate feedback.

OUR IDEA

Our team's original intent was to create a website that not only educates children about Queensland's wildlife but also integrates elements of Australian Indigenous culture. The challenge we faced was finding a way to effectively combine these two aspects into an interactive learning platform suitable for children aged 5 to 12. Ultimately, we developed a website called Wild Wonders, which incorporates multimedia content—such as videos, games, and detailed animal descriptions—and skillfully integrates cultural elements to enhance the learning experience for children.

During the brainstorming process, each team member contributed design ideas, but as discussions progressed, we realised some concepts were not fully aligned. Initially, we considered using an Australian map to present our theme and including an events list to highlight related activities. However, we later determined that these features would detract from the website's main focus. Additionally, since our data source was from the Queensland Government, further discussions and coordination led us to finalise four core functional modules: a homepage display, an animal information page, educational videos, and interactive games. We also decided to narrow the range of animal species to those commonly found in Queensland. This structure not only introduces children to basic animal knowledge but also, through multimedia, allows them to gain an understanding of the cultural background of Indigenous peoples during the learning process.

Our research into other relevant websites revealed that most educational platforms tend to focus on a single theme, such as introducing animals or promoting culture. In contrast, our site aims to combine these themes, which presents both a challenge and an opportunity for innovative development.

TARGET AUDIENCE

Our main target audience for the Wild Wonders web platform is children aged 5-12, especially those in primary school. The platform is designed to give children an interactive and engaging way to learn about Queensland's wildlife. The interface has been adjusted to suit this age group, making sure it is simple, easy to use, and fun, which can attract children to use it more often and learn from it.

By adding interactive games like puzzles, quizzes, and sound-matching activities, children are encouraged to learn through playing. These games are not only for fun but are also made to help children understand key ideas about Queensland's wildlife, like recognizing animals by their sounds, knowing their habitats, and learning about their cultural importance in Indigenous Australian traditions. This game-based method makes learning feel exciting and immersive, keeping children interested and wanting to come back, while also helping them remember the information better in a fun way.

Although the platform is mainly made for younger children, it can also be interesting for older students, teachers, and even parents. For example, teachers can use Wild Wonders as a tool in the classroom to introduce topics about Queensland's wildlife and Indigenous cultures, while parents might enjoy using the platform together with their kids. Also, anyone who is interested in Queensland's wildlife may find the animal information pages and educational videos helpful.

Persona

• Personas - Lily Ruben



Lily Ruben

—“I want to learn about every animal in Australia!”

Demographics

- Age: 8 years old
- Gender: Female
- Location: Brisbane, Queensland, Australia
- Education: Primary School
- Family: Lives with parents and a younger brother

Personality

- Interests: Loves animals and has a strong interest in drawing and reading about wildlife.
- Learning Style: enjoy interactive content and games.

Keywords

- Curious
- Imaginative
- Wildlife lovers

Biography

Lily is an eight-year-old girl who lives in Brisbane and is passionate about animals and nature. She likes to spend her weekends exploring local parks and zoos and drawing the animals she sees.

A Statement About the User's Typical Day

- Lily wakes up for her favourite science class, where she learns about animals and ecosystems. In the evening, she enjoys a nature documentary on her tablet and sketches animals before bedtime.

Future Goals

- Learn more about wildlife and their habitats, and pursue a future career in animal care or conservation.

Frustrations

- Limited access to wildlife due to urban living.
- Difficulty finding child-friendly, educational resources.

Motivations

- Curiosity about nature and a love for animals.
- Support from her parents in exploring and learning about the natural world.

• Personas - Lucas Thompson



Lucas Thompson

—“I love animals and I want to have fun with them!”

Demographics

- Age: 10 years old
- Gender: Male
- Location: Noosa, Queensland, Australia
- Education: Primary School
- Family: Lives with her parents, an older brother, two dogs, and one cat.

Personality

- Interests: Loves animals, playing games, and watching cartoons. Enjoys spending time with his pets and going to places where he can interact with animals.
- Learning Style: enjoy interactive content and games.

Keywords

- Playful
- Energetic
- Animal-Lover

Biography

Lucas is a lively 10-year-old from Noosa who adores animals. He's happiest when surrounded by his stuffed animals, playing animal-themed games, or visiting places where he can interact with real animals.

A Statement About the User's Typical Day

- Lucas enjoys recess and creative activities at school. After school, he loves playing with his pets, playing animal games on his tablet and watching funny animal videos. On weekends, he often visits zoos or animal parks with his family.

Future Goals

- Have interaction with animals, and maybe get another pet.

Frustrations

- Gets bored with content that's too serious or educational.
- Dislikes text-heavy content; he prefers visual and interactive experiences.

Motivations

- Curiosity about nature and a love for animals.
- Support from his parents in exploring and learning about the natural world.



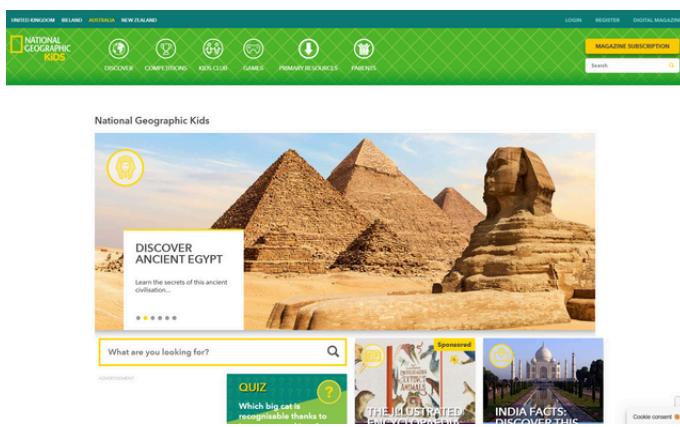
INSPIRATION

During the development of Wild Wonders, our goal was to identify engaging and innovative methods to captivate children's attention. We explored a variety of educational tools, games, and cultural narratives to create a platform that transcends traditional wildlife education. Our broader aim was to foster a connection between children and Australia's Indigenous culture. This section outlines the key concepts that inspired our approach, from interactive games to the integration of Indigenous culture and language, all designed to make learning both enriching and meaningful.

- **Multimedia Learning**

We drew significant inspiration from widely recognized educational platforms such as National Geographic Kids and BBC Earth Kids. These platforms leverage dynamic videos and interactive games to facilitate learning. Building on their foundation, Wild Wonders extends this model by incorporating aspects of cultural preservation and varied learning methods. In addition to educational videos, our platform includes Indigenous stories and insights into the natural behaviours of animals, aiming to inspire curiosity in children about both cultural and environmental topics.

- **National Geographic Kids**



- **BBC Earth Kids**



- **Interactive Games**

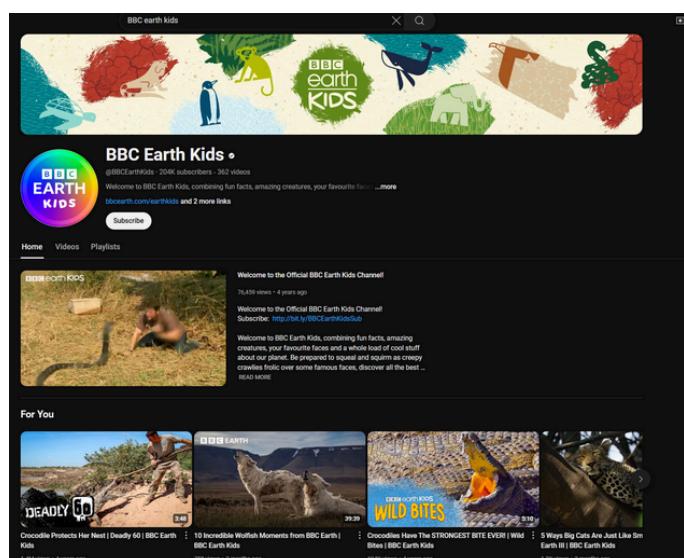
Interactive games serve as an effective medium to help children reinforce their learning, and is inspired by contemporary educational platforms such as Khan Academy Kids. Drawing inspiration from educational tools like puzzle games and sound-matching activities, we developed several interactive features centred around animals. For instance, our animal sound-matching game encourages children to identify animals by listening to their unique sounds. This approach not only adds an element of enjoyment but also enhances children's understanding of the animals they encounter.



- **The interactive game engages players by using fun challenges, making the learning process more enjoyable.**

- **Video Presentations**

Our video section uses the YouTube API and is inspired by modern educational platforms like BBC Earth Kids, which make learning more engaging through fun videos. We focus on showcasing the habits and behaviors of animals, allowing kids to learn about them while watching. The content is designed to be visually appealing and kid-friendly, making it simple, fun, and easy to understand. We also regularly update the videos to keep the content fresh, and we incorporate interactive elements to encourage kids to stay engaged and actively learn about nature.



- **Cultural Integration**

One of the central features of our platform is the incorporation of Indigenous culture and language from Queensland. Since we all live in QLD, we utilized data from QLD Wildlife and APIs provided by the QLD Government and Brisbane State Library to collect essential information on animals, including their Indigenous names. We also integrated cultural stories from community websites into each animal's profile. This approach reflects our team's commitment to promoting cultural diversity, aiming to provide children with both a scientific understanding of animals and an appreciation of their cultural significance within the Indigenous context of Queensland.

- **API from QLD government**



WildNet database

Provides an overview of the WildNet database and the internet sites that deliver its data and products approved for publication.

A screenshot of the State Library of Queensland website. At the top, there are links for "Subscribe", "Donate", "Library Shop", "Search the catalogue", and "Catalogue login". Below that is the "STATE LIBRARY OF QUEENSLAND" logo. A navigation bar includes "WHAT'S ON", "COLLECTIONS", "SERVICES", "VISIT", "DISCOVER", "GET INVOLVED", "ABOUT", and a search icon. Under "WHAT'S ON", the "Open data" section is highlighted. To the left of the main content area, there is a sidebar with the heading "Open Data" and a paragraph about the library's open access policy. To the right, there is a large historical map of Brisbane.

- **Open data from Brisbane state library.**

- **Aboriginal and Torres Strait Islander with Brisbane.**



LITERATURE REVIEW

In order to improve our application and make informed design decisions, we decided to conduct additional research into designing for children. The following section briefly summarises 4 peer reviewed sources and highlights important aspects that helped us refine our design.

Literature Review #1

- **Building a Playground: General Guidelines for Creating Educational Websites for Children**

This peer reviewed article explores techniques and factors that technical communicators need to be aware of when designing web sites for children. The authors acknowledge that children are one of the fastest growing segments of internet users. The researchers in this paper conducted a usability test with 9 students on an educational website targeted at 7-9 year olds. The paper links the results of the usability study to themes from existing literature to come up with design guidelines. Insight is gained into factors like the page length, font size and type, colour and more. For example, the researchers note the children prefer bold and vivid colours as well as enjoy sound included in the website. This information is valuable to us because it informs and supports the design decisions we made. We intentionally have used bright colours as well as incorporated sound to engage and cater to our target audience. Following some of the guidelines presented in this paper can help enhance the user experience.

LITERATURE REVIEW



Literature Review #2

- **Designing Tourism Websites for Children: Guidelines and Experimental Results**

This peer reviewed article, although focusing on the tourism sector, presents some useful guidelines and insights for designing children's websites. The authors highlight the need for creating usable and accessible websites for children. Factors like structure navigation, language and gamification are discussed. Some guidelines we have adopted since the beginning of our design, for example, that language should be simple and precise relative to target age. They also acknowledged the utility of gamification in engaging users to learn through a fun and engaging way. Again this source provided valuable insight on where the team should continue to direct their efforts in terms of refining our design.

Literature Review #3

- **Physics Students' Academic Achievement and Motivation in a Gamified Formative Assessment**

Following on the theme of gamification this peer reviewed article examines how gamification can be employed as a strategy to enhance learning outcomes in the physics domain. The researchers measured academic achievement and motivation as variables to observe. The study began with a pre-test administered to students to gauge their current level of understanding, followed by gamified physics lessons, and concluded with a post-test. The researchers eventually found that gamifying assessments can increase both academic achievement and motivation in the subject. They also found that introducing the concept in an engaging way played a role in students' career motivations as well. This is useful information for our project as it justifies our motivation for spending development time on the game interactions of our website. By gamifying our educational website and making it engaging, we stand a better chance of achieving our goal of fostering a sense of appreciation and understanding of Queensland wildlife and culture in younger populations.



LITERATURE REVIEW



Literature Review #4

- **The Effect of Gamified STEM Practices on Students' Intrinsic Motivation, Critical Thinking Disposition Levels, and Perception of Problem-Solving Skills**

This peer reviewed article takes on a similar methodology and investigation as the previous one. The researchers hypothesise that STEM-related learning integrated with gamification can lead to lasting learning. Like the previous study researchers employ a pre and post testing methodology to assess changes in learning and motivation. However, the main difference here is the content which is being assessed. Much like the previous study the researchers found that cultivating a more engaging learning experience increases motivation and learning outcomes. Students in this study noted that they learned new content in science and maths, with student interviews describing activities as "fun" and "nice." This further strengthens our cause to focus on the gamification of our website, as this will motivate our target users to continue to learn novel content on our website.



THE END PRODUCT



Wild Wonders is an interactive educational platform designed for children aged 5-12.

Our goal was to combine fun games, detailed animal information, and educational videos to teach children about Queensland's wildlife and Indigenous Australian culture. We aimed to create a fun and educational experience that helps children explore and learn more about the environment around them.

- **Interactive Games**

We planned three different games for Wild Wonders to make learning fun and enjoyable:

1. **Puzzle Game:** This game would let children put together pictures of Queensland animals with three difficulty levels—easy, medium, and hard. It would help improve problem-solving skills while introducing them to native animals. We also wanted to add sound effects when pieces are placed correctly, making the game more interactive and engaging.
2. **Quiz Game:** Our idea was to create a quiz with multiple-choice questions that test children's knowledge of Queensland's animals. The questions would teach kids about animals' behaviors, habitats, and cultural significance, while also making the game enjoyable with visual clues.
3. **Sound Matching Game:** This game was meant to help children match animal sounds to the correct animals. We thought this would help improve their listening skills and help them recognize animals by their sounds, giving them a deeper understanding of Queensland's wildlife.



- **Animal Information Pages**

Each animal on the platform would have a detailed page that includes:

1. Scientific Information: We planned to include facts about the animals' habitats, diets, and behaviours, using official wildlife data provided by the Queensland Government to make sure the content is accurate.
2. Cultural Stories: We wanted to include Indigenous cultural stories for each animal, explaining their importance in Indigenous Australian traditions. By adding Indigenous names and stories, we hoped to help children learn about cultural heritage and make the learning process richer and more meaningful.

- **Educational Videos**

We planned to include a section with videos about Queensland's animals, focusing on their behaviours and habitats. These videos, using the YouTube API, would combine scientific facts with cultural stories and show animals in their natural environments. This multimedia approach would keep children interested and make learning more dynamic.

- **Homepage and Navigation**

The homepage was designed to be bright and easy to use. We planned to include a photo gallery of iconic Queensland wildlife like koalas, kangaroos, and emus to immediately catch children's attention. We wanted the navigation to be simple with large buttons that clearly lead to games, animal profiles, and videos, making the platform easy and intuitive for children to use.

- **Aesthetic and User-Friendly Design**

Our team wanted the platform to have a friendly and vibrant look, specifically made for children. Bright colours, playful animal icons, and a simple layout were designed to create a welcoming space where children could explore freely.

CONCEPT EVOLUTION & DESIGN PROCESS

- **Initial Ideation and Inspirations**

The original concept for Wild Wonders was to combine Australian flora and fauna themes with children's education to create an interactive educational platform. In the last assignment, each team member presented different themes and ideas in the individual poster section, and finally we had an in-depth discussion around wildlife and cultural education. Group member Hezi was inspired by a map-enabled website, an idea that was then developed to show the distribution of animals in Australia using interactive maps.

The main user group of the website is children between the ages of 5 and 12, because children in this age group are curious and at a stage where they know everything and have a natural interest in animals. To further increase the website's appeal, the team incorporated Australian Aboriginal culture and language into wildlife content, which was also a good opportunity to promote Australian culture. This unique idea quickly caught on with everyone, resulting in a design that not only promotes wildlife conservation but also educates children about Australia's rich cultural heritage.

- **Team Collaboration and Roles**

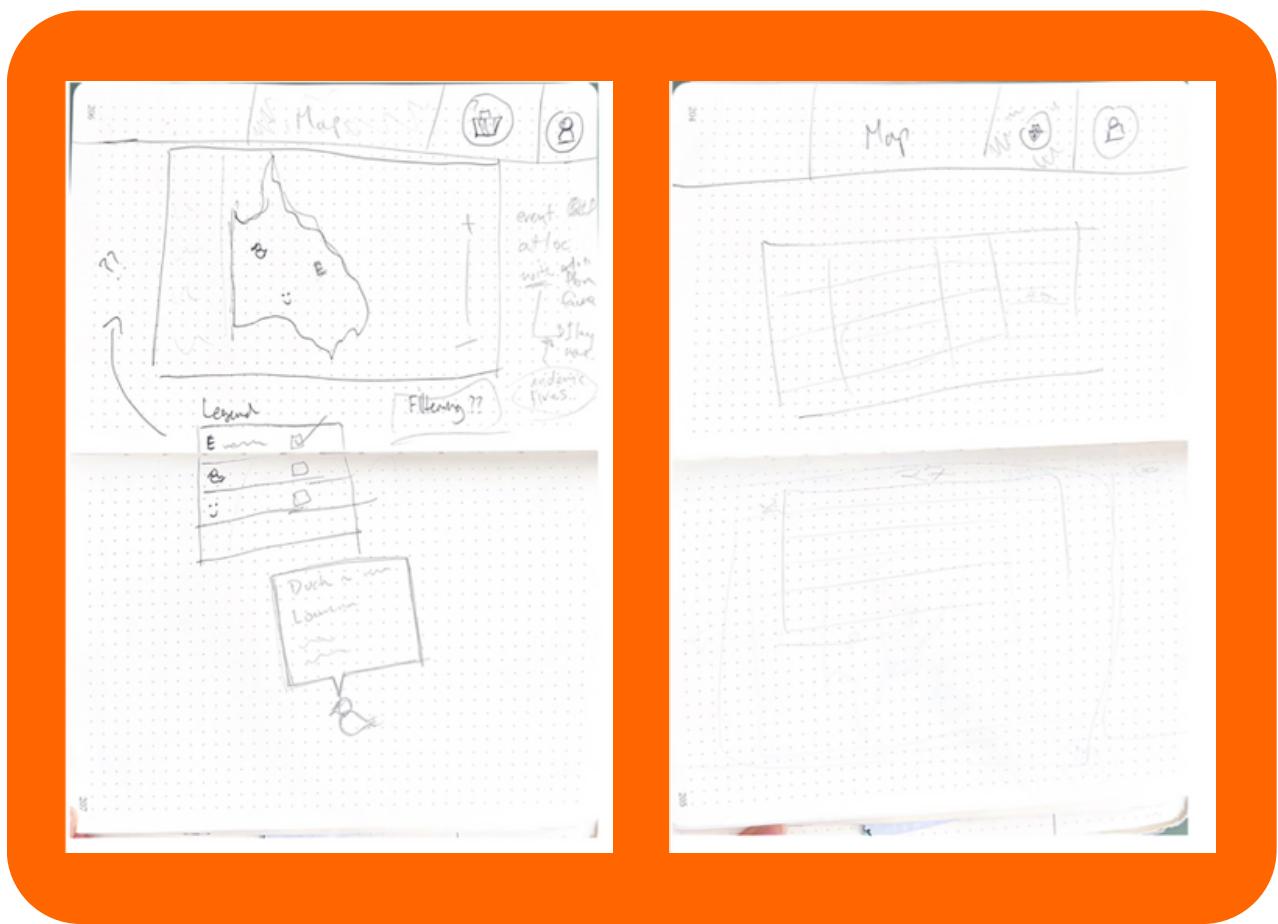
The team is made up of five members, who are reasonably divided based on their skills and experience:

- Leah: Responsible for the overall visual design, interface aesthetics, and user experience.
- Hezi and Ann handle the technical design part and back-end programming connecting with API.
- Ellie and Jasmine are mainly responsible for front-end development and project management.

Jasmine has been chosen as the team leader and is technically skilled and highly organized, as well as very responsible. It ensures smooth communication among the team and enables each member to complete the task on time. Although Ann is not the group leader, she takes on a lot of tasks, also plays the role of supervising the team members and helping us improve the group work at the very end

- **Design Iterations**

The initial design of the project was based on the map and calendar functions Hezi wanted to present. Users can click on markers on the map to view animal habitats and get information about related species. The first version of the design also introduced zooming functions and pop-ups to display detailed descriptions of animal species. In addition, the calendar feature allows users to track wildlife-related activities.



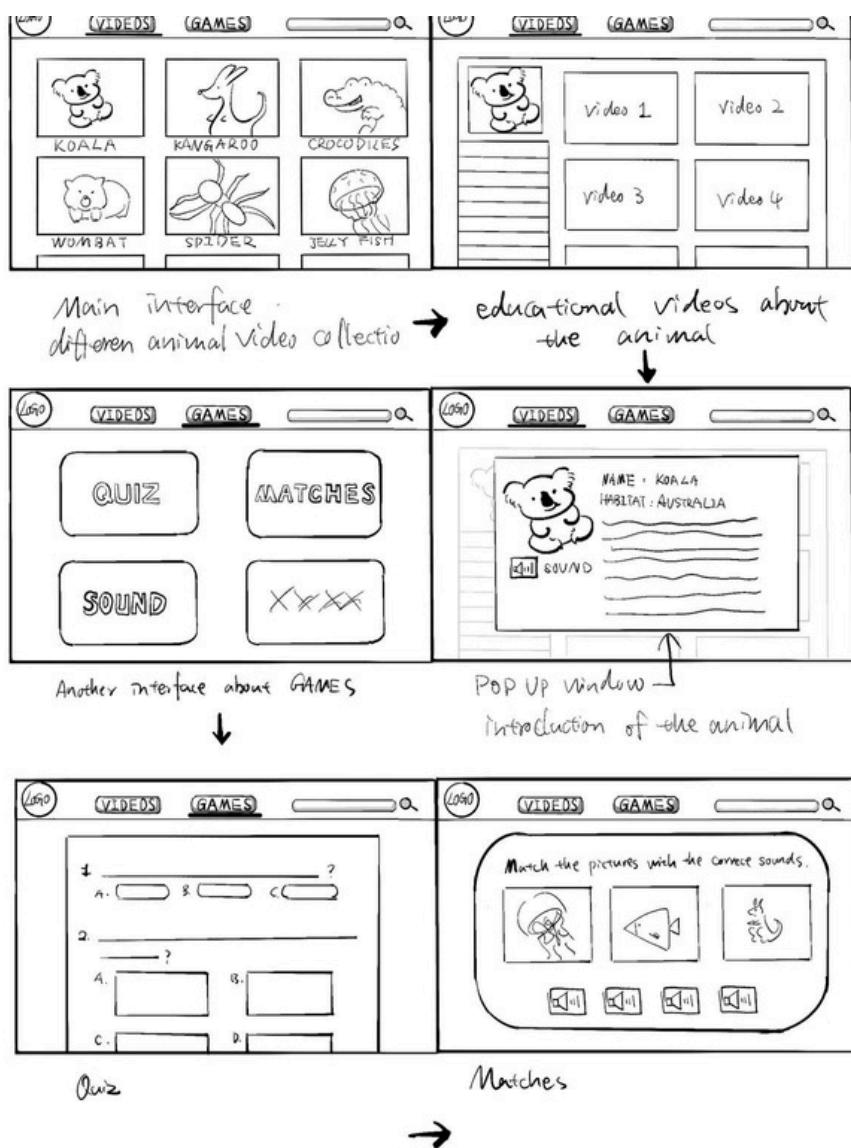
On that basis, after the first iteration, we've added more interactive features, such as a video feature that shows educational videos related to Australian wildlife. These videos can not only help users learn about different animal species but also raise awareness of animal protection. We've also introduced a variety of fun game features, including quizzes, puzzles, and sound-matching games, allowing users to learn more about Australia's wildlife while enjoying themselves. However, during the mentor feedback session, the team realized that there was a sense of disconnection between the map and the game's features and that the user experience was disconnected. Therefore, after discussion, the team decided to shift its focus to game features that are more interesting to children. To better engage users, we removed the map feature and enhanced the interactive game design. This change brings the design into focus and improves the overall user experience.



CONCEPT DOCUMENT

Given that the previous section has covered the design process, what remains is the final version of the design, the Paper mock-up, and the interaction plan.

Final Design



According to previous iterations, we have designed the final website interface design sketch.

The updated homepage now opens with various animal video collections. When users click on a category, they can explore more content related to those animals. Each animal has an introduction video, which brings more detailed information as well as its voice when clicking on the animal's image.

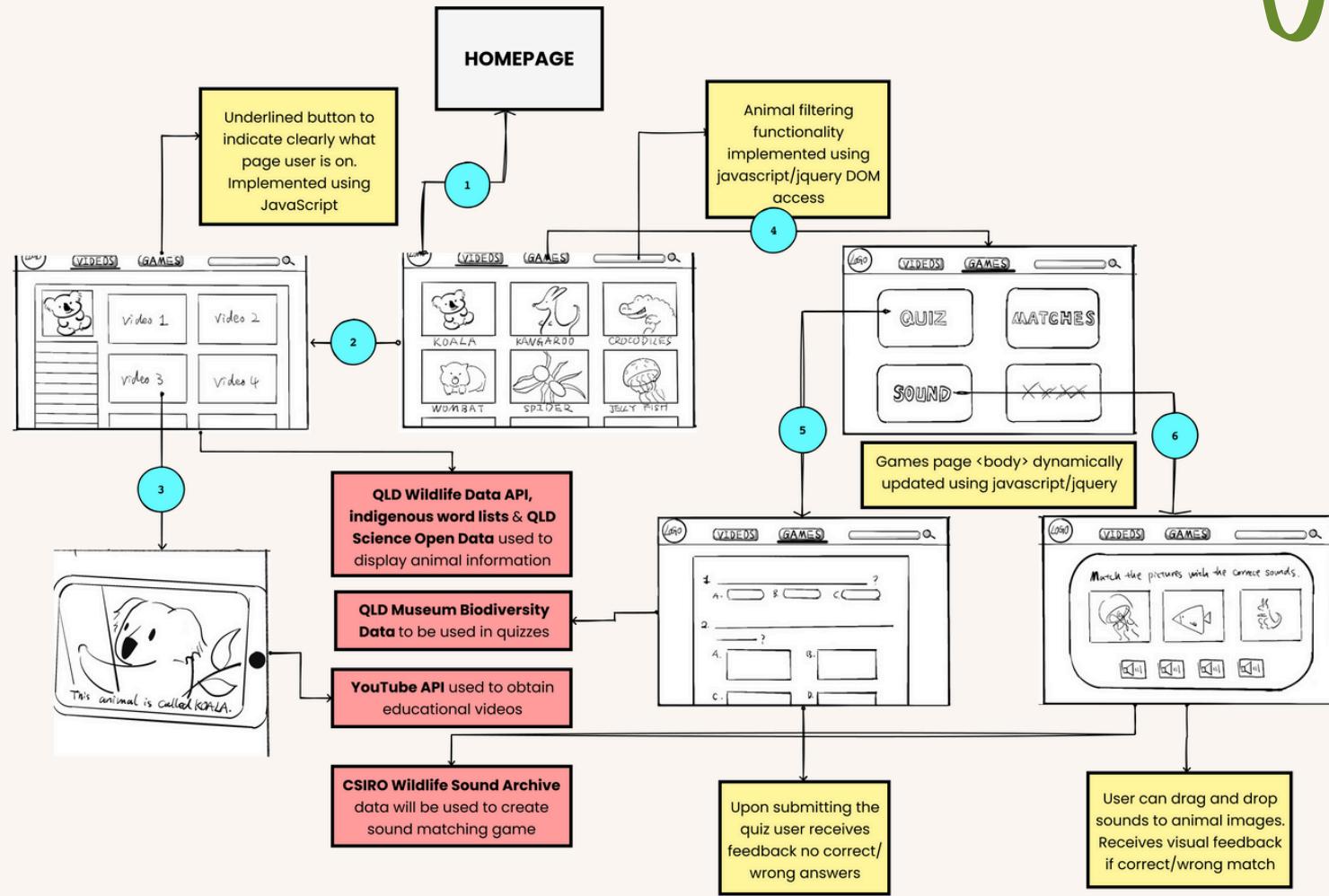
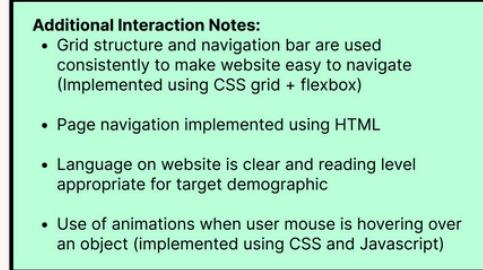
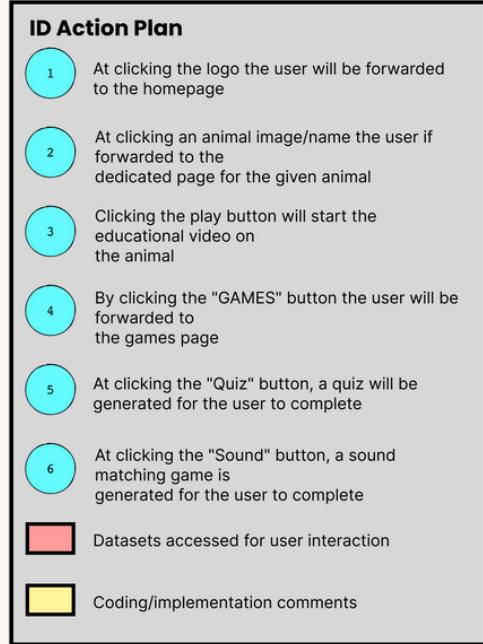
The second core function of the navigation bar is still the game function, which is designed to help them enhance their understanding of wildlife in a fun and interactive way. In terms of visual design, cartoon-style illustrations were chosen to create a fun and appealing look to appeal to younger users. This design choice is in line with children's aesthetic preferences, making the site feel friendlier and more welcoming.

At this stage, we have already decided on the design style and the basic layout. The site also includes enough interesting interactivity for the target audience to enjoy.

Interaction Plan

After completing our first iteration of sketches and ideation, the next step was to create an interaction plan based on our storyboard, sketches and site map. The interaction plan below aims to build off the sitemap and show how the user will interact with our application to complete the 3 key interactions we set out. The interaction plan aims to consider structure, mapping, orientation, visibility, feedback, error prevention, language, consistency.

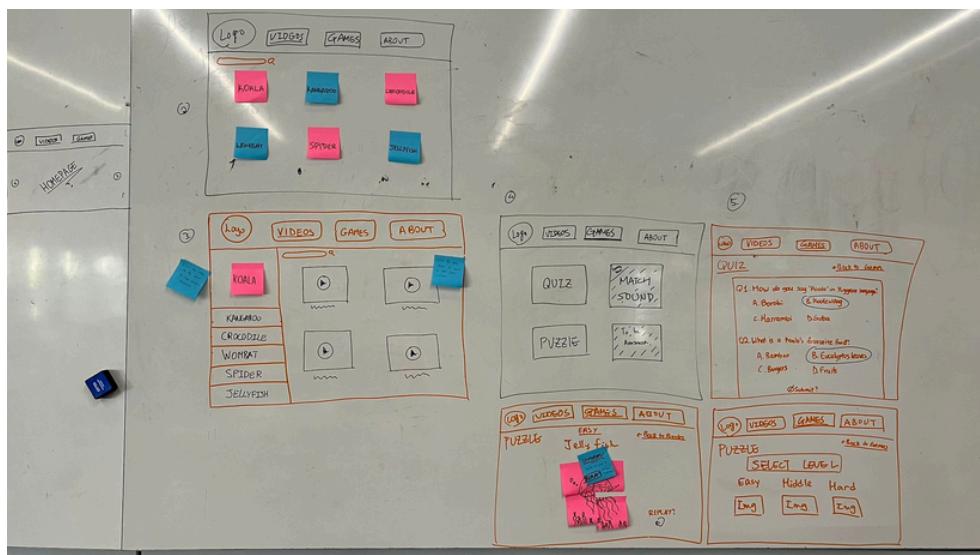
Interaction Plan



Mock Up/Paper Prototyping Session

After Completing our interaction plan and developing our design a bit more we felt ready in week 7 to conduct a paper prototyping session. The goal of this paper prototype was to collect some initial feedback of our design and also start to visualise our interaction flow in action. Our team drew out the frames of our application on white boards, formulated a testing plan and successfully tested our paper prototype and gained valuable feedback on our design.

Team members took responsibility of facilitating the testing protocol, recording notes and changing the state of the prototype. Because all team members were fulfilling their individual roles it meant that we could obtain more authentic and comprehensive user feedback. We were able to gain insight into features that users enjoyed or felt confused about. For example, on completing a quiz, users were confused on how to navigate back to the games page to select another game to play. This feedback informed the inclusion of the back button in our final design



- TASKS:**
1. Start on page ①. Navigate the website to watch a video about a koala
 2. Watch a video about a Kangaroo
 3. View biological information about a Jellyfish Koala
Read
 4. Complete a quiz on the website
 5. Complete a puzzle on the website
- CARD**

PROTOTYPE

High fidelity Prototype

Given that the previous section has covered the design process, what remains is the final version of the design. Our high fidelity prototype was constructed in Figma based off our sketches

Homepage

The homepage is the main entry point of the platform. It uses bright colours and fun animal images to grab children's attention quickly. The clear buttons make it easy for users to navigate to different sections, like the games, videos, and animal information pages. The simple design lets kids use it without much help.



Games Section

This section includes three interactive games: puzzle, quiz, and sound-matching. These games are designed to be fun and educational, helping children learn more about Queensland's wildlife and Indigenous culture.

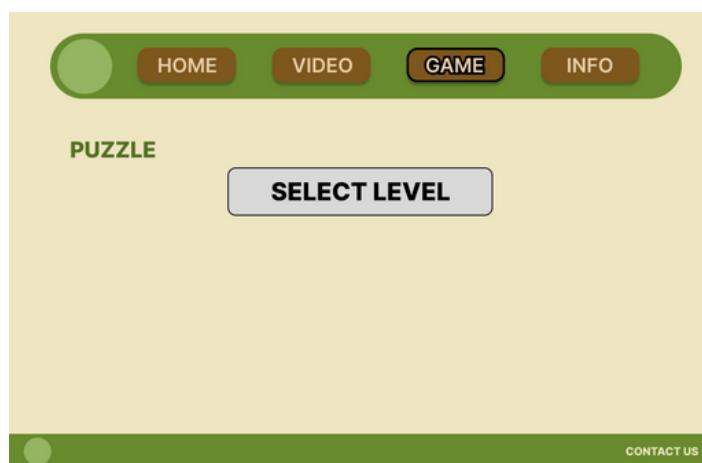


PROTOTYPE

High fidelity Prototype

Puzzle

The puzzle has three difficulty levels—easy, medium, and hard—so users of different ages and skills can enjoy it. The drag-and-drop feature makes it easy for children to play.



Quiz

The quiz tests children's knowledge of Queensland's animals through multiple-choice questions. The questions are made to be fun and help children learn more about the animals while they play.

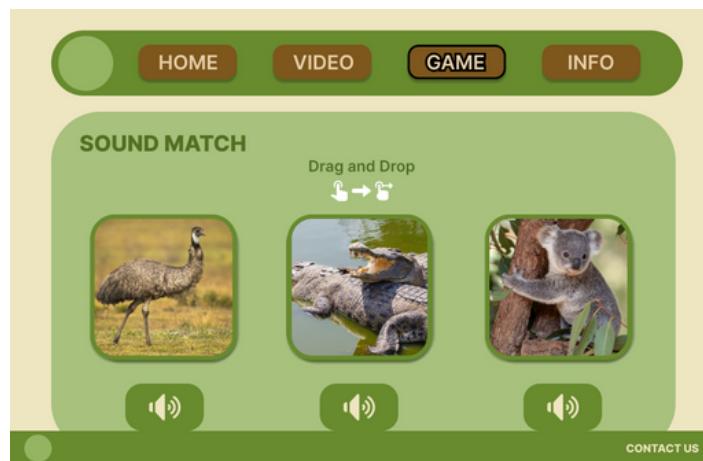


PROTOTYPE

High fidelity Prototype

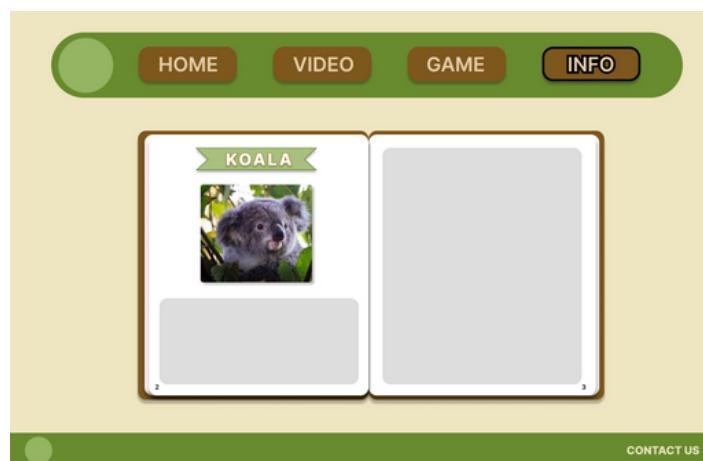
Sound Match

In this game, children listen to animal sounds and match them with the correct animals. The drag-and-drop feature, along with sound effects, makes it a fun way for children to learn how to recognize animals by their sounds.



Animal Information Page

Each animal on the platform has its own page with scientific facts, real animal sounds, images, and Indigenous stories, offering a comprehensive educational experience. The information is shown in a flipbook format, similar to turning the pages of a real book. Users can easily move through the animal profiles to learn more about their habitats, behaviours, and cultural importance.



PROTOTYPE

High fidelity Prototype

Video Section

This section features educational videos via the YouTube API, focusing on the behaviors, habitats, and cultural significance of Queensland's animals. The simple video player with clear controls makes it easy for children to use.



Contact Us Page

We added a "Contact Us" page to keep users engaged. Users can provide feedback, share suggestions, or ask questions through this page. This helps us continue improving the platform based on user input.

A screenshot of a web page titled "Contact Us". At the top, there are four tabs: HOME (highlighted in green), VIDEO, GAME, and INFO. Below the tabs, there is a form with fields for "First Name", "Last Name", "Email address", and "Your message here". At the bottom of the form, there is a "Submit" button. At the very bottom of the page, there is a "CONTACT US" button.

MINIMAL VIABLE PRODUCT

Following the initial collection of user feedback, we commenced the development of the project's demonstration version. This demo serves as an evolving prototype that will eventually grow into a fully functional web application. The core objective of the MVP is to showcase the essential functionalities of the website, with the primary technical challenge being the integration of animal data from external APIs, allowing for dynamic and real-time data display.

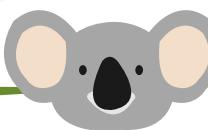
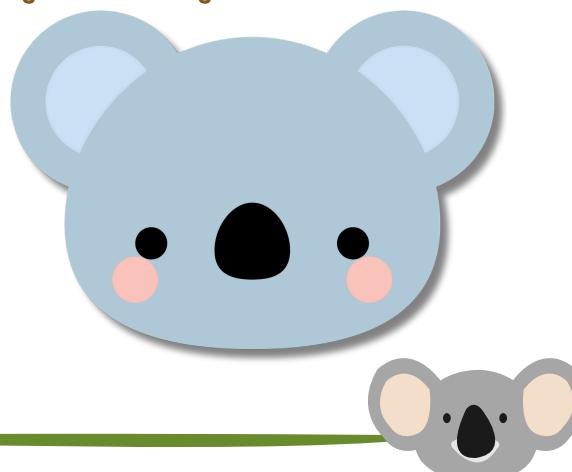
Before proceeding with development, we carefully defined the core features the MVP must include. To ensure project manageability, the team maintained a strict focus on scope management, limiting the MVP to only the most fundamental features of the website. These features represent the minimum viable product that we can deliver to users. The MVP will serve as the foundation upon which we can test key functionalities, gather further user feedback, and iteratively refine and expand the platform. By concentrating on these core elements, we ensure the feasibility of the MVP while paving the way for the development of the complete website in the future.

The MVP comprises several essential features that will allow users to experience the basic interactivity of the website, while also highlighting its educational and interactive elements. The primary components of the MVP are as follows:

- **Comprehensive Animal Content Display**

The homepage serves as the primary entry point for the website, guiding users to various sections such as videos, games, and animal information pages. The design of the homepage is simple yet intuitive, specifically optimised for children aged 5 to 12.

It features vibrant colours and straight forward animal imagery to capture children's attention and encourage exploration of the website.



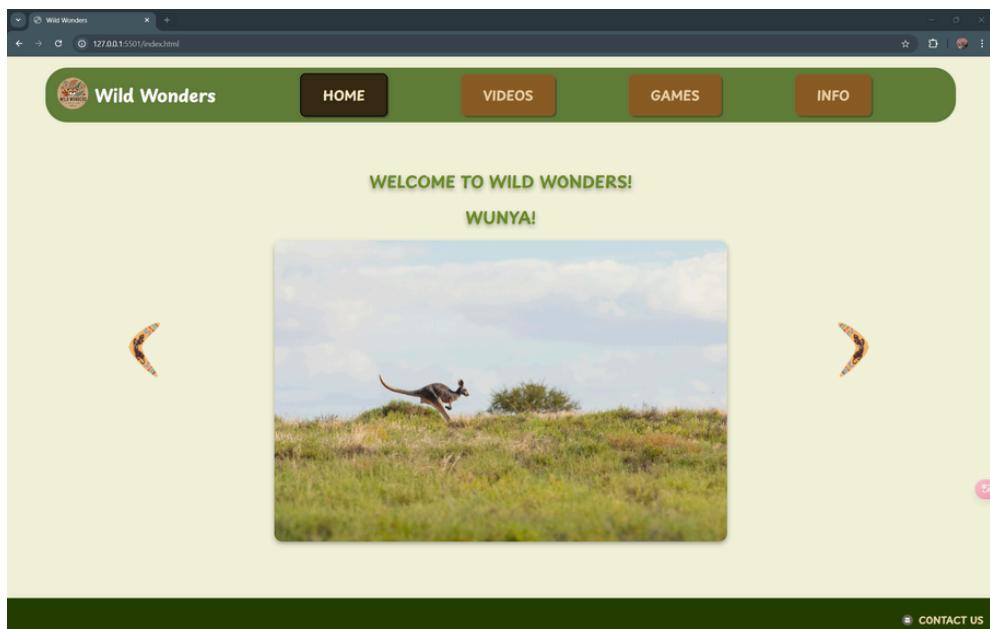
Demo Content

After completing the MVP, we conducted an initial product demonstration. The primary objective of this demonstration was to present the basic interactive features of the website, particularly the integration of APIs and the display of animal information. This phase focused on evaluating user reactions to the functionalities and making adjustments based on their feedback. The website successfully integrated animal data from external APIs and utilised gamification to enhance children's learning experience, making the content more engaging and accessible.

However, the development of the demo exceeded the anticipated time frame, largely due to challenges encountered during the integration of the HTML structure with CSS and JavaScript. This resulted in delays in the progress of certain pages. Despite these setbacks, the demo provided a solid foundation for testing key features and collecting further user feedback.

- **Homepage Photo Gallery**

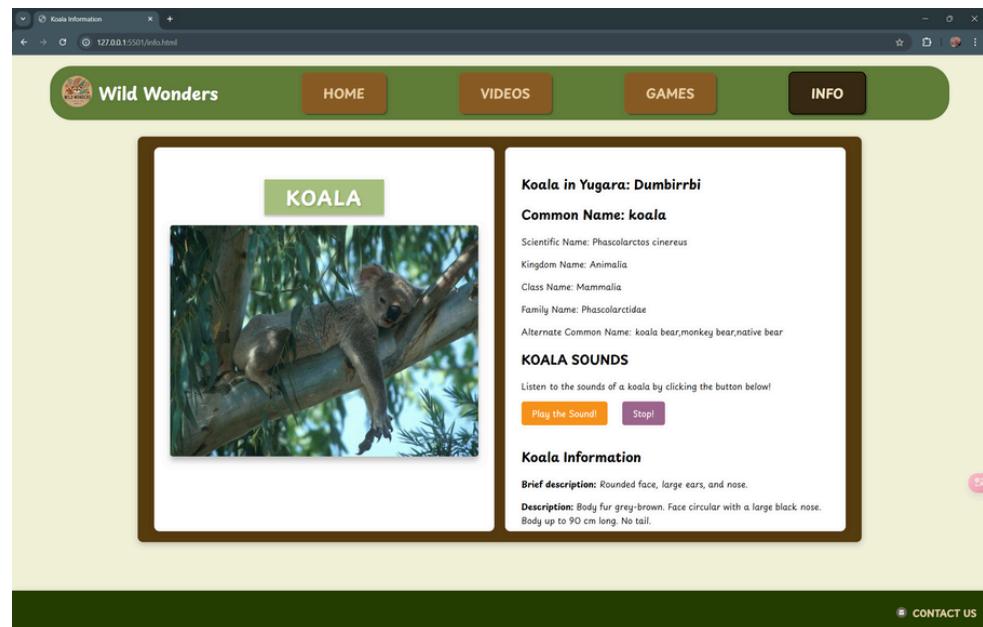
The homepage will feature a visually appealing photo gallery that showcases Queensland's iconic wildlife. This gallery is designed to capture users' attention immediately upon entering the website, encouraging further exploration of the site's content.



Demo Content

- **Animal Information Based on Queensland Datasets**

The website will integrate official wildlife datasets provided by the Queensland Government. Through external APIs, we will dynamically pull and display detailed animal information, ensuring that the content is both authoritative and up to date, providing users with accurate and rich learning resources.



```
// GET KOALA API
const dataApiUrl =
  'https://www.data.qld.gov.au/api/3/action/datastore_search?resource_id=ebd00c34-d5d1-4266-8f6b-d9424104a307&filters={"English":"Koala"}';

fetch(dataApiUrl)
  .then((response) => response.json())
  .then((data) => {
    ...
  })
  .catch((error) => {
    ...
  });

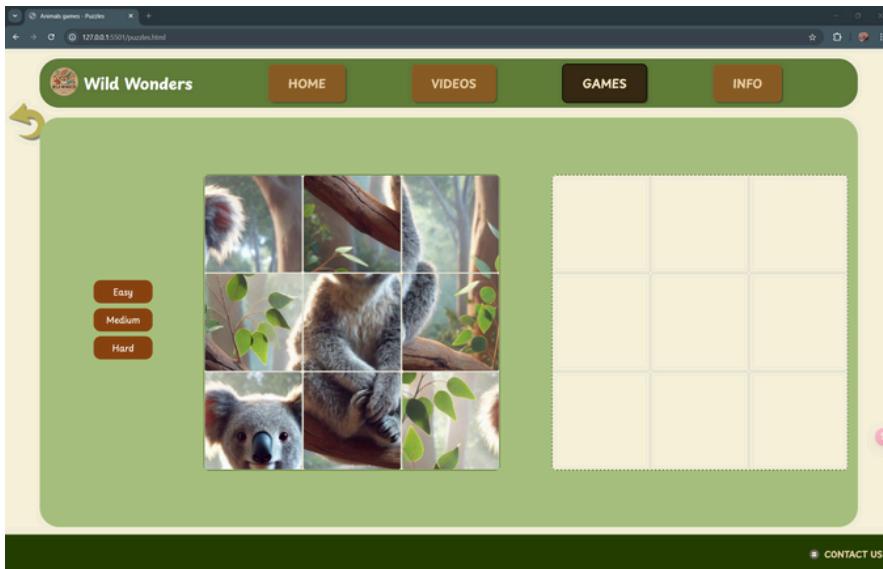
// GET KOALA API
const speciesApiUrl = "https://apps.des.qld.gov.au/species/?op=getspeciesbyid&taxonid=860&f=json";

fetch(speciesApiUrl)
  .then((response) => {
    ...
  })
  .then((data) => {
```

- **3 Full Interactive Game Modules**

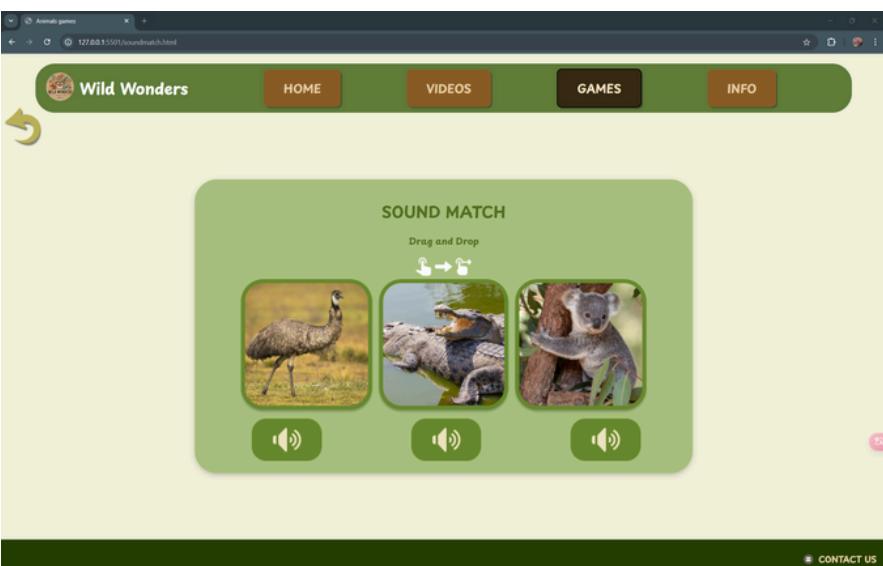
The MVP will include three key interactive game modules—a puzzle game, a quiz game and sound matching Game. These games are designed not only to enhance the enjoyment of the learning experience but also to help children deepen their understanding of the animals through engaging and interactive means, reinforcing the educational content in a playful way.

Demo Content



Engaging quizzes
spark children's
curiosity to learn
more.

A screenshot of a quiz section titled "QUIZ". The header includes tabs for HOME, VIDEOS, GAMES, and INFO. The quiz consists of three multiple-choice questions about dingoes and kangaroos. Question 1 asks when dingoes usually hunt, with options: Early morning and evening, Midday, and Late night. Question 2 asks what a kangaroo's main diet is, with options: Leaves and grass, Meat, and Fruits. Question 3 asks what kind of habitat dingoes prefer, with options: Deserts, Forests, and Urban areas. A "CONTACT US" button is at the bottom.



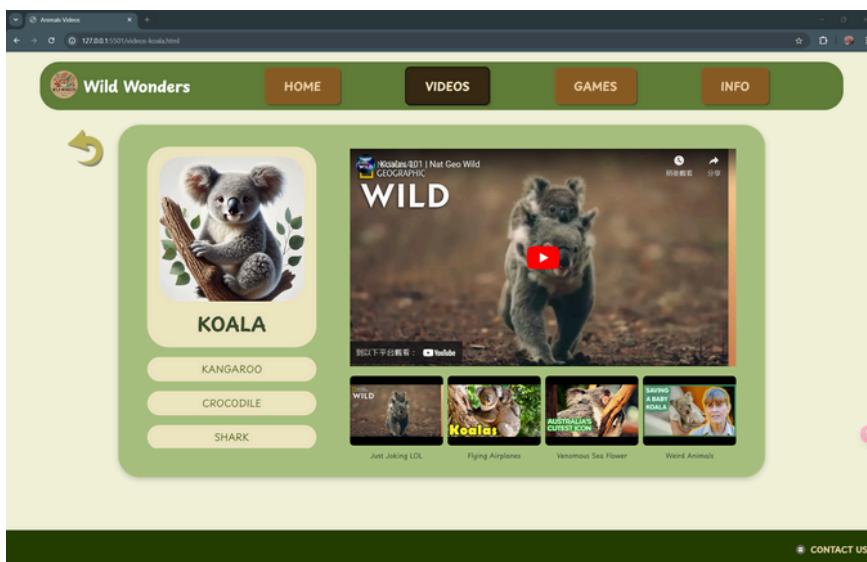
Puzzles with
different levels
encourage kids
to play.

During the MVP,
some part of code
in sounds
matching game
didn't function
properly due to a
bug.

Demo Content

- **YouTube API Animal Video Integration**

Through the use of the YouTube API, the MVP will embed educational videos related to animals. These videos will not only showcase animal behaviour and lifestyles but will also incorporate cultural context, enabling children to learn about the animals while gaining insight into the cultural significance behind them, thereby enriching both the educational depth and engagement of the content.



A variety of videos allows children to choose, with other animals displayed on the left side.

- **Contact us Form**

A simple yet effective contact form will be designed to collect user opinions and suggestions. This feature will be instrumental in ensuring that the website remains user-focused, allowing the team to continuously optimise its functionality based on real-time feedback, while facilitating ongoing improvements and updates.

The form is titled "Contact Us". It contains five input fields: "First Name" (with placeholder "e.g. John"), "Last Name" (with placeholder "e.g. Smith"), "Email Address" (with placeholder "e.g. example@gmail.com"), "Phone Number" (with placeholder "e.g. 0412 345 678"), and a large "Enter Your Message Here" text area. A "Submit" button is located at the bottom right.

User Feedback and Improvements



Through user testing, we gathered several valuable suggestions that will guide us in improving the overall user experience of the website:

- **Homepage Content Insufficiency**

Users noted that the homepage content appeared somewhat sparse. They suggested adding a clear call-to-action, such as directing users to a specific feature page, to encourage further exploration.

- **Improved Accessibility**

To enhance the accessibility of the website, it was recommended to increase the interface's contrast. This change would not only benefit visually impaired users but also improve the overall browsing experience for a wider audience, enhancing usability.

- **Insufficient Interactivity on Video Pages**

While users appreciated the design of the video pages, they found the clickable elements unclear. It was recommended to include a "Click to Play" prompt or similar text bubble next to the video to make it more evident that the video is interactive.

- **Enhanced Interactivity on Animal Detail Pages**

Users suggested that, upon clicking an animal image on the homepage, the site should not only redirect to the animal's detail page but also play the animal's sound. This would create a more immersive experience and further engage users in learning about the animals.

- **Puzzle Game Constraints**

During testing, users found that once a puzzle piece was placed correctly, it could not be moved again. It was suggested to allow users to readjust the puzzle pieces if they noticed a mistake, rather than being forced to reset the entire game.

- **Optimising the Sound Matching Game**

The current design of the sound matching game was perceived as not intuitive enough. Users recommended implementing a drag-and-drop feature to complete the sound matches, making the game experience more interactive and engaging.



Planned Improvements after MVP

After thoroughly evaluating the feedback from our MVP demonstration, we have developed a series of targeted improvement plans. These enhancements will be built on the foundational features of the MVP, with a focus on ongoing optimization and iteration throughout the development process. Our primary objective is to substantially improve the overall user experience, ensuring that the website achieves its highest level of functionality and performance upon its final release.

- **Enhancing Interactivity and Usability**

In subsequent versions, we will prioritise improving the usability of both the video pages and homepage by incorporating more interactive prompts. This will ensure users can easily navigate and operate the website.

- **Strengthening Game Modules**

Based on user feedback, we will optimise the logic of the puzzle and sound matching games. This includes allowing more flexibility in moving puzzle pieces and incorporating intuitive drag-and-drop functionality, providing a more enjoyable and educational experience for children.

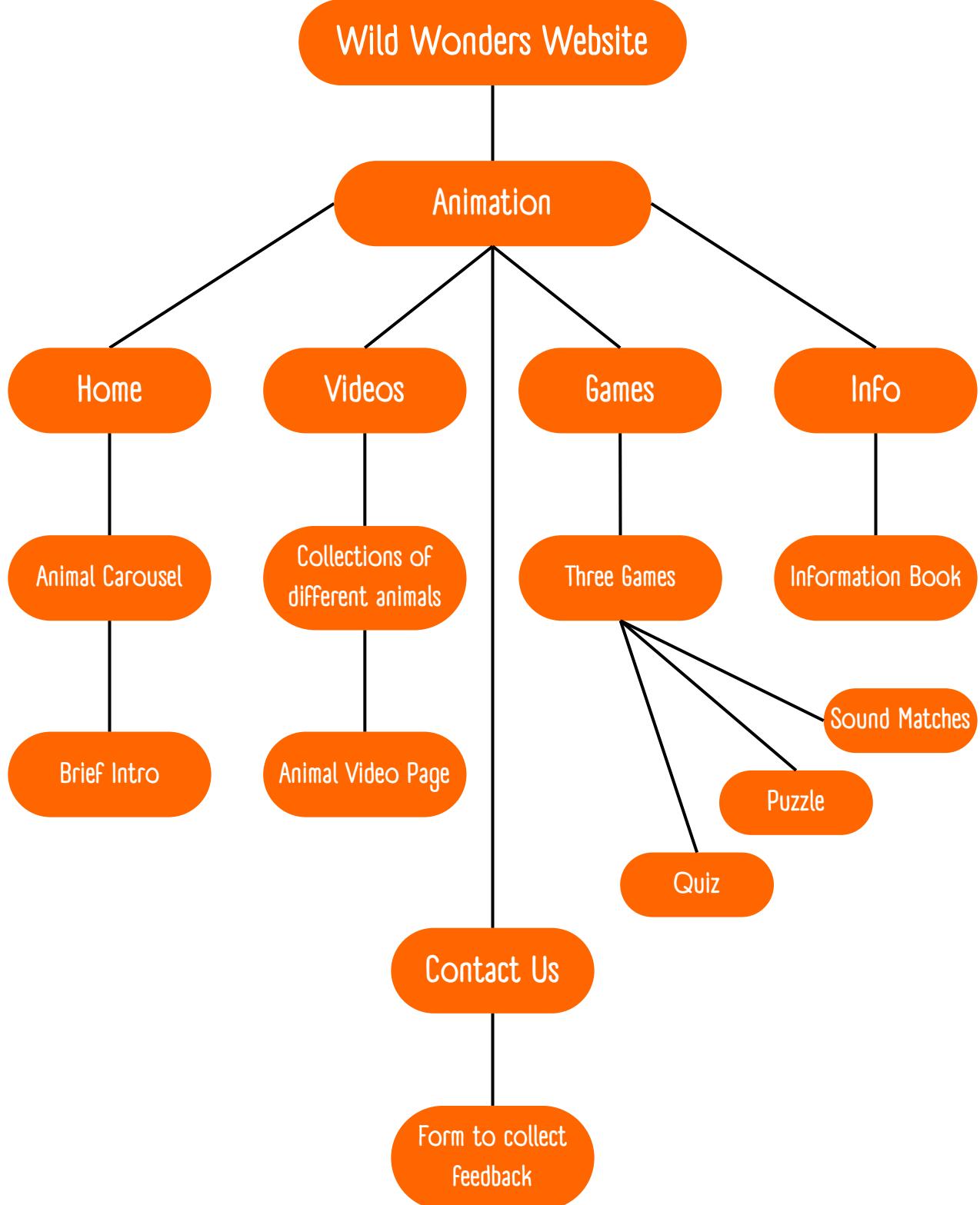
For the sound match game, even though user feedback suggested that we make the game more engaging by fully implementing the drag and drop functionality the team decided to go another route. We considered user needs, time constraints, and our technical capabilities in our decision. Ultimately we decided to simplify the design of the game to further align with our target user. Instead of drag and drop we decided to use click functionality. Additionally, we opted to present one sound to the user and 3 images to reduce cognitive load as well as adhere to a simplistic design which is one of our UX goals.

- **Improving Animal Detail Pages**

To further engage users, we plan to enhance the animal detail pages by playing the animal's sound upon clicking the image. This added element of interactivity will deepen children's understanding of the animals and make the learning experience more dynamic.

WEB APPLICATION

Site Map



Aesthetics

- **Colour palette**

Wild Wonders uses a bright and cheerful color scheme, with soft yellows, greens, and browns dominating the background. These natural tones align well with the wildlife theme. It also creates a calm, welcoming atmosphere which makes the website feel friendly and accessible for younger users.



#254001



#4c5c31



#607d3b



#8b5e26



#a67f3a



#e8d0aa

- **Icons**

Cartoon-like animal illustrations and icons throughout the pages keep the design fun and engaging. We used simple, colorful illustrations to encourage our target audience to develop their curiosity and exploration, making the website feel more like an adventure rather than just a learning platform.



- **Typography**

The font Wild Wonders uses is 'Playpen Sans' for the entire website. It is a clear, bold and easy-to-read font. The playful, rounded typeface is perfect for young readers, balancing fun with readability.

WELCOME!

Ready for an adventure? Let's dive into the wild Wonders of animals!

```
* {  
    font-family: "Playpen Sans",  
}
```



- **Logo Design**

The color choice of the logo is consistent with the entire website. Using a koala as the main character in the center reinforces the website's purpose, which is focused on Australian animals. The dark brown and light yellow background is well contrasted with the green navigation bar, making the logo stand out. The leaves at the bottom and the glasses on the koala's face are used as decorative elements but also give the logo an educational sense.



- **Layout & Navigation**

The layout is clean and straightforward, making it easy for young users to find their way around. Large buttons and simple navigation mean kids can jump between sections like "Videos" and "Games" without getting lost. The design is intuitive, ensuring that even younger children can enjoy the site without adult assistance.



Functionality & Interactivity

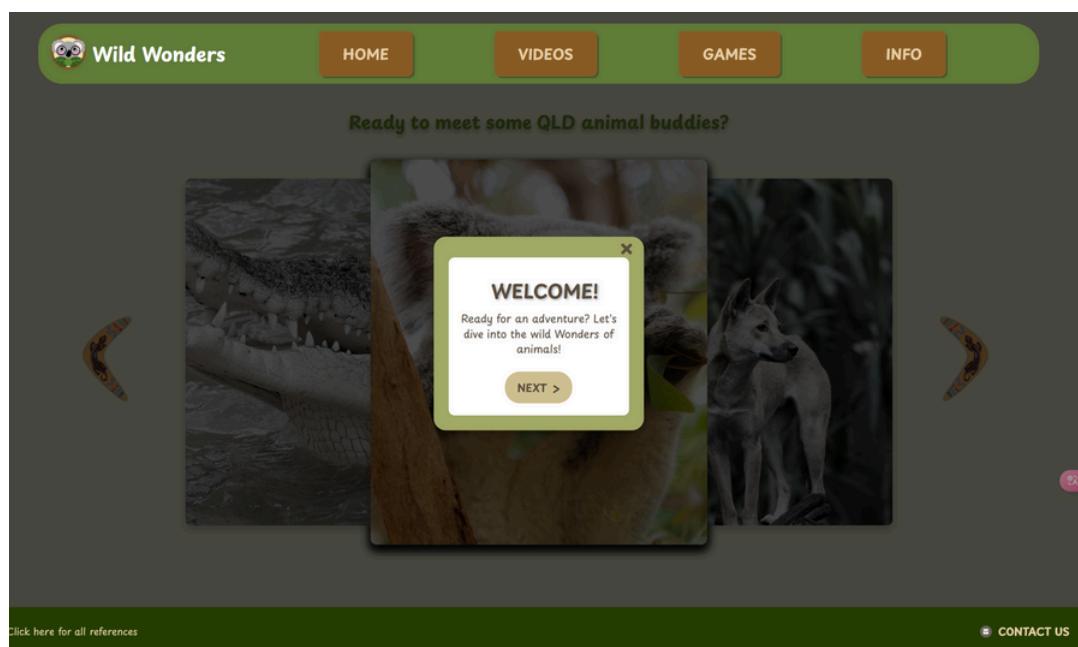
- **Loading page**

We revamped the homepage and added a loading page to enhance the platform's dynamism. We used a cute koala SVG paired with a background GIF. The updated homepage effectively captured the attention of the children during testing, as evidenced by their positive reactions.



- **Homepage - Navigation**

The homepage serves as the primary entry point for the website, guiding users to various sections such as videos, games, and animal information pages. It features vibrant colors and straightforward animal imagery to capture children's attention and encourage exploration of the website. We also incorporated clear call-to-action buttons to direct users to key areas of the site, making it easier for children to navigate and engage with the content.



Functionality & Interactivity

- **Homepage - Visual Design**

The homepage features images of iconic Queensland wildlife, such as koalas, kangaroos, and crocodiles, enhanced with subtle animations that add visual appeal and interactivity.

The animal gallery is presented in a grid format, showcasing a variety of Queensland's representative species. When users hover over an animal image, a brief and engaging description appears, drawing further attention. This design not only provides an intuitive interface but also stimulates children's curiosity, making the process of exploring wildlife both enjoyable and educational.



- **Homepage - Quick Navigation**

Additionally, the homepage includes clearly defined quick navigation buttons that allow users to swiftly switch to the video page or game modules. This design ensures a seamless browsing experience, offering an intuitive and efficient way for users to navigate through the site's content.



Functionality & Interactivity

- **Video Page**

The video page is specifically designed to showcase educational videos about Queensland wildlife. These videos, sourced via the YouTube API, cover various aspects of animal behaviour, habitats, and their ecological roles within the Australian environment.



- **Video Player and Interface Design**

The video page features a clean and intuitive player interface that is easy for children to operate. The play button and progress bar are designed to be straightforward and user-friendly, ensuring that children can watch videos without difficulty. Each video covers different animal species, accompanied by brief explanatory text that helps children grasp the key themes of the video.

- **Related Video Recommendations**

A recommendation section is included on the video page, offering additional videos based on the theme of the current one being viewed. This feature encourages children to further explore related content, thereby broadening their knowledge of wildlife and the ecosystem.

A screenshot of a video player interface. The main video frame shows a koala climbing a tree. The video title is 'Koalas 101 | Nat Geo Wild GEOGRAPHIC WILD'. Below the video are four smaller thumbnail images: 'Just Joking LOL', 'Flying Airplanes', 'Venomous Sea Flower', and 'Saving a Baby Koala'. On the left side of the screen is a sidebar with a large koala icon at the bottom. It lists animal categories: KOALA, KANGAROO, CROCODILE, and SHARK. At the bottom of the sidebar is a green button labeled 'VIDEO'.

Functionality & Interactivity

• Information Page

The information page is designed as a virtual flipbook, providing an engaging, immersive learning experience. Each page contains a combination of images, textual descriptions, Indigenous names, cultural stories, and real animal sounds, integrating multimedia elements to deepen children's understanding.



• Information Page - Flipbook Functionality

The information page simulates the experience of flipping through a real book, allowing children to browse animal content page by page. This dynamic feature not only enhances interactivity but also sustains children's curiosity as they explore the site. Each animal page also includes simple icons, enabling children to quickly navigate to other animals' profiles, providing multiple ways for exploration.

```
const flipBook = (elBook) => {
  let currentPage = 0;
  elBook.style.setProperty("--c", currentPage);

  elBook.querySelectorAll(".page, .firstpage").forEach((page, idx) => {
    page.style.setProperty("--i", idx);
    page.addEventListener("click", (evt) => {
      if (evt.target.closest("a") || evt.target.closest("#koala-image")) return;
      const curr = evt.target.closest(".back") ? idx : idx + 1;
      elBook.style.setProperty("--c", curr);
      currentPage = curr;

      pageFlipSound.currentTime = 0;
      pageFlipSound.play();
      console.log(`Flipped to page ${currentPage + 1}`);
    });
  });
}
```

```
/* FlipBook */
.book {
  position: relative;
  display: flex;
  width: 60cm;
  /* Let pointer event go through pages of lower z than .book */
  pointer-events: none;
  transform-style: preserve-3d;
  transition: translate 1s;
  translate: calc(min(var(--c), 1) * 50%) 0%;
  /* Incline on the X axis for pages preview */
  rotate: 1 0 0 30deg;
  box-sizing: border-box;
  counter-reset: page -2;
  & a {
    color: inherit;
  }
}
```

Functionality & Interactivity

- **Information Page - Content Display and Sounds**

Each animal's profile contains detailed information, including its significance in Australian Indigenous culture, associated cultural stories, and real sounds. These sounds are retrieved via APIs to ensure authenticity and accuracy. High-resolution images offer a vivid visual representation, providing children with a rich, immersive learning experience.



```
const koalaImage = document.getElementById("test");
if (!koalaImage) {
  console.error("Koala image element not found.");
  return;
}

koalaImage.addEventListener("mouseover", function () {

  console.log("are we here");

  if (isPlaying) {
    audio.pause();
    audio.currentTime = 0;
    isPlaying = false;
    console.log("Audio paused");
  } else {
    audio.play();
    isPlaying = true;
    console.log("Audio playing");
  }
});

} else {
  console.error("No audio file found in the API response.");
}
```

- **Information Page - Cultural Stories**

In addition to scientific information, each animal's profile includes narratives about its cultural importance in Indigenous traditions

Koala & Queensland

Animal Emblem In 1971, the koala was officially named the animal emblem of Queensland. This decision came after a newspaper poll showed that the public strongly supported the koala. The Queensland Government introduced the poll in response to a proposal for all Australian states to choose their own animal emblems.



Koala in Indigenous Story

Koalas hold deep cultural significance for many First Nations in eastern Australia. Stories about koalas are woven into the Dreaming stories and traditions of many Indigenous groups.

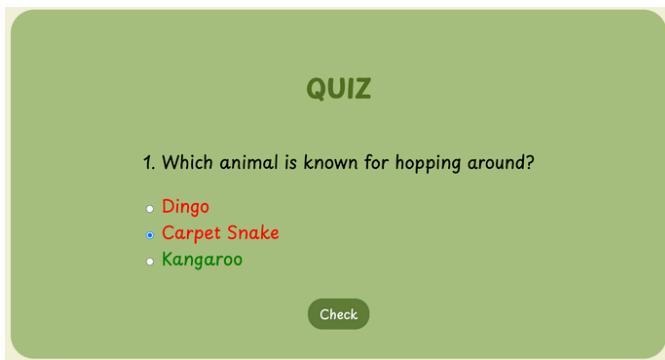
The word "koala" comes from the Dharug language, spoken in the Sydney region. It comes from the word "gula" or "gulamany," which means "no drink," referring to the fact that koalas rarely need to drink water.

Functionality & Interactivity

- Quiz page

The quiz game is created to be a fun way for children to test their knowledge about Queensland's wildlife. This section includes a series of multiple-choice questions that ask children to identify animals, their habitats, and behaviors.

Quiz Functionality: Children can click on the answer they think is correct. The answer will then be instantly marked, showing green for the correct answer and red for the wrong one. After each question, immediate feedback is given to help children understand their mistakes or confirm their correct knowledge.



```
// Displays one question at a time
function showQuestion() {
  quizForm.innerHTML = "";
  const question = selectedQuestions[currentQuestion];

  const questionDiv = document.createElement("div");
  questionDiv.classList.add("quiz-question");

  const questionTitle = document.createElement("p");
  questionTitle.textContent = `${currentQuestion + 1}. ${question.question}`;
  questionDiv.appendChild(questionTitle);

  question.options.forEach(option) => {
    const label = document.createElement("label");
    label.innerHTML = `<input type="radio" name="option" value="${option}"> ${option}`;
    label.classList.add("option");
    questionDiv.appendChild(label);
    questionDiv.appendChild(document.createElement("br"));
  };

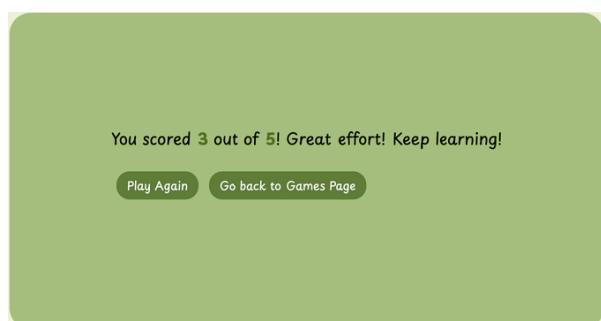
  quizForm.appendChild(questionDiv);
}

document.querySelector(".check-button").addEventListener("click", checkAnswer);

// Changes options colour to red if incorrect and green if correct
function checkAnswer() {
  const selectedOption = document.querySelector('input[name="option"]:checked');
  if (!selectedOption) return; // If no option is selected, do nothing

  const answer = selectedOption.value;
  const correctAnswer = selectedQuestions[currentQuestion].correct;
```

End of Quiz Feedback: One set of five questions. After completing the quiz, children can see a summary of their results, including how many questions they answered correctly. They are also given the choice to retake the quiz or explore other sections of the website. This feedback helps reinforce their learning and motivates them to continue discovering more content on the platform.



```
const playAgainButton = document.createElement("button");
playAgainButton.type = "button";
playAgainButton.classList.add("play-again-button");
playAgainButton.textContent = "Play Again";
playAgainButton.addEventListener("click", () => location.reload());

const goToPageButton = document.createElement("button");
goToPageButton.type = "button";
goToPageButton.classList.add("go-to-games-button");
goToPageButton.textContent = "Go back to Games Page";
goToPageButton.addEventListener("click", () => {
  window.location.href = "/games.html";
});

resultDiv.appendChild(resultText);
resultDiv.appendChild(playAgainButton);
resultDiv.appendChild(goToPageButton);

quizContainer.appendChild(resultDiv);
```

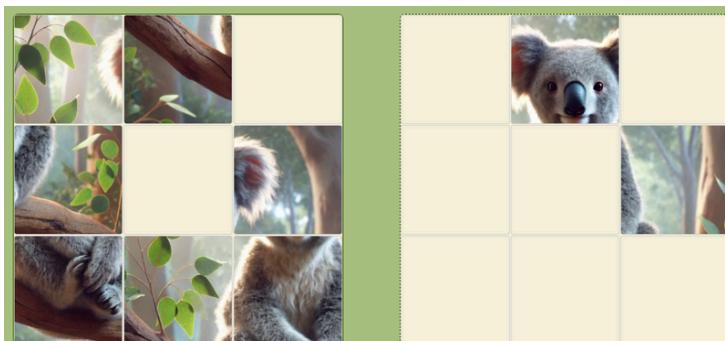
Functionality & Interactivity

- **Puzzle page**

The puzzle game gives children a fun and interactive way to learn by putting together images of Queensland's wildlife. There are three levels of difficulty to fit different age groups and skill levels: easy (3x3 grid), medium (5x5 grid), and hard (7x7 grid). These options allow children to choose a challenge that matches their abilities.



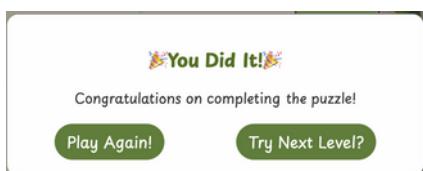
Drag-and-Drop Puzzle Mechanics: Children can drag and drop the puzzle pieces into the right places on the grid. At the start of the game, the pieces are shuffled, and the child needs to rearrange them to complete the picture. When a piece is placed correctly, a sound effect plays, rewarding them and making the game more engaging.



```
function createPuzzle(size) {
  piece.style.backgroundPosition = `${posX}% ${posY}%`;
  piece.style.backgroundSize = `${size * 100}% ${size * 100}%`;

  piece.draggable = true;
  piece.addEventListener("dragstart", dragStart);
  piece.addEventListener("dragover", dragOver);
  piece.addEventListener("drop", dropPiece);
  piece.id = `piece-${i}`;
  pieces.push(piece);
}
```

Interactive Feedback: Once the puzzle is completed, a congratulatory message appears along with a cheerful sound effect, providing positive reinforcement and motivating them to try another level or game.



```
function showFeedbackModal() {
  console.log("Normal level completed! Triggering modal...");
  const feedbackModal = document.getElementById("feedbackModal");
  feedbackModal.style.display = "block";
}

function playAgain() {
  const feedbackModal = document.getElementById("feedbackModal");
  const hardFeedbackModal = document.getElementById("hardFeedbackModal");
  feedbackModal.style.display = "none";
  hardFeedbackModal.style.display = "none";
  createPuzzle(gridSize);
}
```

```
<!-- FEEDBACK MODAL FOR HARD LEVEL -->


<div class="modal-content">
    <h2 class="modal-title">★ Incredible Job! ★</h2>
    <p class="modal-message">
      You conquered the hard puzzle. You're a puzzle master!
    </p>
    <div class="button-group">
      <button class="play-again-button" onclick="playAgain()">
        Play Again!
      </button>
      <button class="try-next-level-button" onclick="tryNextLevel()">
        Next Challenge!
      </button>
    </div>
  </div>


```



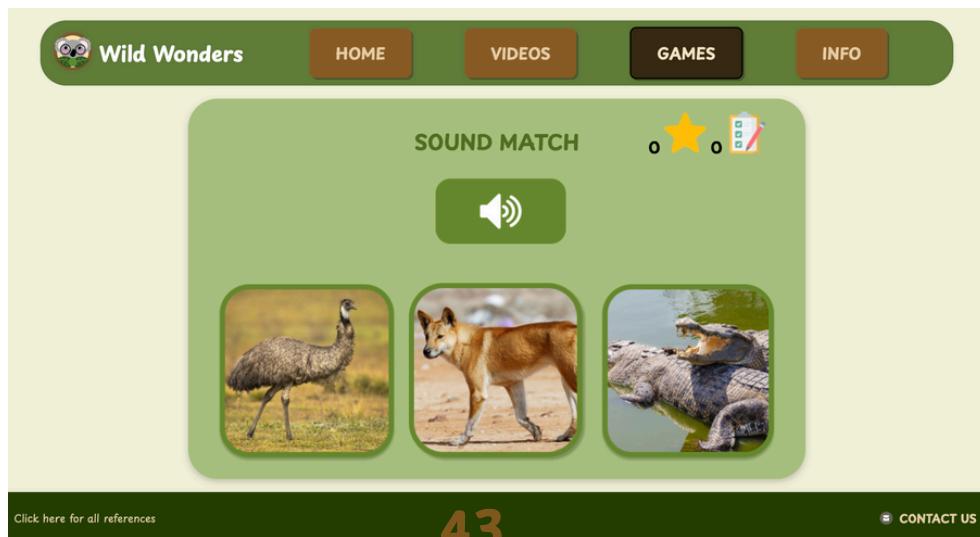
Functionality & Interactivity

- Sound match page

The sound match game page was designed to promote learning for children on our website in a gamified way as supported by our background research. The design is simple and streamlined with 1 sound the user can click on to hear, and 3 image options they can select to match to the animal. At the top of the section are two counters with the star representing how many correct answers they have got, and the clipboard representing how many answers have been completed. Sound data pulled directly from the Atlas of Living Australia (ALA) API.

```
148 function playSound(animal) {
149   fetch(`animal_apis/${animal}`)
150     .then(response) => response.json()
151     .then(data) => {
152       const soundUrl = data.sounds[0].alternativeFormats["audio/mpeg"]; // Fetch the audio file URL
153
154       if (soundUrl) {
155         audio = new Audio(soundUrl); // Create an audio object
156
157         // Play button
158         audio.play(); // Play the audio
159       } else {
160         console.error("No audio file found");
161       }
162     }
163     .catch(error) => {
164       console.error("API request failed!", error);
165     };
166
167   sleep(10000).then(() => {
168     audio.pause();
169   });
170
171   listened = true;
172   audio = null;
173 }
```

We intentionally did not include a signifier for wrong answers as our goal is to motivate children to keep learning, and we felt this would discourage children. Upon starting a new game the options are randomised with one sound corresponding to an animal. The user answers 5 questions by clicking on the image of the animal they think they are hearing. Once they have completed the game there is a feedback modal much like the puzzle congratulating the user on completing the game and presenting them with how many questions they got correct. The user is able to choose to play again or navigate back to the games page to play a different game.



PROJECT REVIEW

Delivery of Minimum Viable Product (MVP)

Our core goal was to deliver the MVP, which included three interactive games (Puzzle, Quiz, and Sound Matching), animal information pages, and educational videos. This goal was successfully achieved, with the platform being tested by children aged 5-12. The MVP provided the essential foundation for collecting feedback and improving the product.

Delivery of Additional Features

Beyond the MVP, we aimed to implement extra features such as dynamic sound effects in games and enhanced quiz feedback. While we managed to include some of these features, other additions, such as more interactive elements for videos, were not fully realized due to time constraints. However, the key features that were delivered were well-received by users, improving both engagement and the educational value of the platform.

Tailored Design for Target Audience

The platform was designed specifically for children aged 5-12, with simple navigation, bright visuals, and interactive elements that cater to their needs. Testing the platform directly with children allowed us to make several adjustments, ensuring that the interface was clear and easy to use. Feedback showed that the design was effective, making the platform both engaging and informative for the intended age group.

PROJECT REVIEW

Website Implementation

We focused on the technical implementation, ensuring smooth functionality of the interactive elements and seamless integration of datasets. The animal information pages and games were optimized for performance, with minor usability issues like sound adjustment being addressed after testing. The platform's core components worked as expected, providing a cohesive and interactive user experience.

User Experience (UX) Goals

Several UX goals were set for the platform, and testing results showed that these goals were largely met:

90% of children completed at least one game level.

70% expressed interest in returning to play more levels.

100% successfully created avatars.

90% interacted with clues in the games. Additionally,

80% of users found the platform enjoyable and easy to use, and they felt that it effectively helped them learn about wildlife.

Meeting Project Brief and Requirements

We met the project requirements by using datasets from official sources, creating an interactive platform that combined educational and engaging elements, and hitting all major milestones. The platform integrated interactive games, multimedia content, and a user-friendly design, meeting the brief's demands for an educational tool for children.



EVALUATION & REFLECTION

Issues & Problems

Time management was one of the key challenges we faced during the project. We didn't allocate enough time to properly test our website with children, which affected our ability to ensure the platform truly met their needs. We countered this by testing on our peers and tutors instead and even though they were not the ideal audience, valuable feedback was still achieved. Additionally, we often found ourselves completing tasks at the last minute, pushing deadlines due to personal commitments or other university work. This lack of effective time management hindered our progress and overall project outcome.

When we began coding, we decided to use CodeSandbox as it allowed us to collaborate on code simultaneously from different locations. While it was convenient, we ran into an issue with the platform's credit system. Initially, we were given 400 free credits, but once those were used up, we had to pay to continue working on the code. We hadn't planned on spending extra money, but we went ahead with it anyway.

Regarding the API information for animals, including scientific names, we originally planned to use data from QLD Wildlife, Brisbane State Library, and Atlas of living Australia to display the content. However, due to our lack of technical expertise, we encountered difficulties in retrieving data from the ALA API. In the end, we sent an email to ALA for assistance. But due to time constraints and the design of the info page, we decided to embed the content directly using HTML instead of using ALA's API.

EVALUATION & REFLECTION



Issues & Problems - Continuation

Additionally, in the initial version of the info book, we successfully integrated an API for animal sounds, allowing children to hear the sounds while reading. However, after we adjusted the layout, due to time limitations and our lack of technical expertise, we changed the functionality so that kids could hear the sounds by hovering the mouse over a koala photo. This feature didn't work smoothly, and we discovered that the issue was related to the setup of the HTML class and CSS layout.

Another difficulty was finding time for everyone to meet up, as we all had conflicting schedules. This was further complicated when teammates occasionally missed studio sessions, which delayed our progress. These challenges taught us the importance of better planning and communication for future projects.

Improvements in the Design Process

Initially, the videos page allowed users to access detailed information about an animal by clicking on its image. However, during early mock-up user testing, it became evident that this approach was confusing for many users, despite the presence of an embedded tutorial explaining the features. Since the goal is to design an intuitive and engaging platform for children, we realised that if it wasn't clear to our peers, it would likely be even less clear to children. Therefore, we decided to rework this feature by presenting the information in a separate, dedicated webpage in the form of a flipbook.

Based on feedback from the latest round of user testing, the flipbook concept was well-received, and users found it engaging and easy to navigate. This adjustment successfully addressed the confusion we observed earlier, ensuring that children can access educational content in a more intuitive and visually appealing way.



EVALUATION & REFLECTION

Improvements in the Design Process - Continuation

The homepage originally featured a simple slideshow, which, during internal reviews, felt static and uninspiring. We aimed to create a more dynamic and welcoming experience for first-time visitors. To achieve this, we replaced the slideshow with an engaging loading page followed by a brief tutorial when the website is first loaded. This not only guides users through the site's features but also provides an immediate call-to-action, encouraging them to explore the available content actively. We further refined the slideshow by displaying the adjacent images in grayscale, while keeping the central image in full colour. This approach draws the viewer's attention to the main picture, making it the focal point of the display.

In the MVP (Minimum Viable Product), the quiz section was structured similarly to a traditional test, displaying all questions at once. We realised that this format could feel overwhelming and too formal for children, potentially hindering their engagement. To address this, we redesigned the quiz layout to show one question at a time, with immediate feedback for each answer. Correct answers are highlighted in green, while incorrect answers are highlighted in red. The updated layout received positive feedback during the latest user testing, with users responding well to the simplified, step-by-step approach. This change helped make the quiz experience more interactive, educational, and fun, aligning with the playful nature of the platform.

EVALUATION & REFLECTION

Improvements in the Design Process - Continuation

We also refined the sound match game, drawing inspiration from phonic + stuff's sound letter matching game. The previous design was less engaging, so we opted for a layout that prioritises playfulness and simplicity, making it easier for children to connect sounds with the corresponding animals. Since our target audience is young children, we felt it was essential to prioritise game-like interactions to keep them engaged while learning.

Overall, the updates we implemented, from redesigning the videos page and homepage to reworking the quiz and sound match game, were driven by user feedback and testing. These changes have contributed to creating a more engaging and child-friendly experience, ensuring that learning about wildlife is as enjoyable as it is educational.

Reflection on Successful & Challenges with Justifications

The website implementation of Wild Wonders is deemed to be a partial success. As a team, we are satisfied with the overall result of our website: we implemented all the features we had hoped to achieve: incorporating API datasets in our website, related cultural stories through a flipbook, and implementing engaging and interactive games to test children on their newfound knowledge. We successfully implemented these features with HTML, CSS, and JavaScript. We decided not to use PHP for the project since we weren't handling any batching or storing data on the website. The only feature that could have required PHP was the contact form, but developing it further was beyond the scope of this course. Despite this, we achieved our deliverables through user testing from peers and tutors during class time, which provided valuable feedback as shown in the User Testing Table below. For future improvements, we would focus on more extensive testing, especially with our target users, to ensure our educational children's website effectively meets their needs.

EVALUATION & REFLECTION

User Testing Think-Aloud Feedback

User	Comments	Improvements/Suggestions
User 1	<ul style="list-style-type: none"> • Likes the loading screen and the tutorial when the website is first loaded as it highlights the different elements, leading the user's eyes to what they need to look at • Likes the animated background on the games page • Likes the colour-coded answers on the quiz game page as it gives immediate feedback • The drag-and-drop on the puzzles page seems intuitive 	<ul style="list-style-type: none"> • Wants to be able to drag and scroll when looking through the animal image carousel on the homepage • Videos page animal selection: when hovering on an animal icon, make the image expand • A bit confused on the star and checklist icon on the sound match game page • Normalise the audios in the sound match game page as some are very loud and very quiet • Volume slider on the info page as the flipbook background audio can be a bit loud
User 2	<ul style="list-style-type: none"> • Likes the loading screen and homepage and likes the tutorial interaction • Likes how the main picture for the animal image carousel is coloured and the rest are black-and-white as it gives more attention to the current slide • Likes the colour and design of the website 	<ul style="list-style-type: none"> • Got confused on the info page as there is no instruction on what to do • Have the option to drag the page like a real book



EVALUATION & REFLECTION

User Testing Think-Aloud Feedback

User	Comments	Improvements/Suggestions
User 2	<ul style="list-style-type: none"> • Likes the layout of the videos page as on the left hand side, there is a column where users can scroll to access other animals • The interaction for the sound match will be easy for children • Thinks the children will like the flipping sound effect on the info page, as it is realistic to a book • The games are fun and the fact that there are different difficulty 	
User 3	<ul style="list-style-type: none"> • Cool loading page but it does take a while • Likes the tutorial as it is #9 on Nilsen's 10 Usability Heuristics - helps users recognise, diagnose and recover from errors • Likes the colour-coded answers in the quiz as it instantly tells the user their feedback • The flipbook makes it fun to navigate • The puzzle sound effect makes it fun • Good website with good interactions and consistent with children 	<ul style="list-style-type: none"> • The boomerang as a next button on the carousel is intuitive but it should be darker to give more of a contrast • For the quiz page, the score can be dynamically updating so users can know their score as they go • The flipbook can have tabs so users can instantly skip to different parts of the book • Think about the WCAG guidelines and make sure it aligns with it • For the animal selection video page, have texts supporting each animal logo

EVALUATION & REFLECTION

Reflecting on the Design Process

Introduction to Wild Wonders' Design Journey

The design process for our website, Wild Wonders, is aimed at engaging children with Queensland wildlife and it was a journey of exploration, creativity, and continuous improvements. We wanted to create an interactive, fun, and educational website that would not only expand their knowledge but also captivate them through games, videos and other engaging content.

Initial Brainstorming and Research Phase

Our project began with a brainstorming session where we identified key features that would make the platform informative and enjoyable for children. We researched existing educational websites, National Geographic Kids and BBC Earth Kids, and took inspiration from interactive designs, focusing on simplicity, vivid colours, and intuitive navigation. We also used Adobe Color to assist us with the colour design. From the beginning, we prioritised user-centric design to ensure the website was accessible and easy for our young audience.

Design Evolution and Iteration

As we progressed from the mock-ups to the MVP to the final, our design evolved through multiple iterations. Initially in our paper sketches, we had two features that we decided not to implement now: the calendar and map features. We thought it wasn't necessary for our educational website and thus, removed it. We did user testing so we could get peer feedback to refine the website. This led us to add more interactive elements, such as the flipbook feature for viewing animal information, and the improved homepage. Each design decision was made to enhance the user experience, making the platform more intuitive while ensuring that children would enjoy using it.



EVALUATION & REFLECTION

Addressing Challenges and Refining Features

One of the main challenges was balancing the educational content with engaging design. Initially, our quiz layout felt too formal, almost like a test, which could have discouraged children. We responded by redesigning the quiz to present one question at a time, offering instant feedback in a fun and colourful way. This change helped to make the quiz more game-like, increasing its appeal to younger users. Another challenge was ensuring that navigation was simple yet effective. Some of our early designs were too complex, leading to confusion during user testing. We solved this by streamlining the interface, adding a tutorial for first-time visitors, and using consistent, easy-to-understand icons.

Feedback and Continuous Improvement

Feedback from the mock-up testing sessions revealed that certain features were confusing or hard to navigate, which led us to make some significant adjustments. For instance, the initial method of accessing animal information through the videos page was unintuitive, prompting us to separate it into a flipbook instead. This change was well-received in the most recent user testing, showing how crucial user feedback was to our design process. Another instance was the puzzle game page where initially, users weren't able to grab and drop the puzzle piece once it was placed onto the grid. This was a common feedback we received during our MVP presentation. Subsequently, we updated it so you could, which was also well-received in the recent user testing.



EVALUATION & REFLECTION

Final Design and Key Takeaways

The final design of the website successfully integrated the core elements we envisioned at the start: interactivity, ease of use, and engaging visuals. By simplifying navigation and adding game-like features, we created a platform that is both educational and entertaining. Each aspect, from the homepage to the games, was designed with the user in mind, ensuring children could easily explore and learn about wildlife in a fun way.

Reflection and Future Improvements

Throughout this process, we learned the importance of flexibility and iteration. Our initial ideas evolved significantly based on testing and feedback, teaching us to remain adaptable and open to change. We also gained valuable insights into designing for younger audiences, such as the need for simplicity, bright colours, and immediate rewards for engagement. These are lessons we will carry into future projects.

Reflecting on the design process, we are proud of how the project turned out. It effectively meets the goals we set out at the beginning and provides an enjoyable, educational experience for children. However, there is always room for improvement, and we look forward to implementing more features and refining the design even further in future versions.

FUTURE OF THIS PROJECT

Moving forward with the project, there are still a few key tasks we plan to tackle. First, we would finish adding the rest of the animal content to the videos and info pages. For the info page specifically, we aim to implement tabs that allow users to easily skip to different sections, so they don't have to keep flipping through the book to reach a certain chapter. We would also finish implementing the contact page as currently, it is only a simple mock-up form. When it comes to games, we have a few ideas and want to add more variety, like puzzles that feature different animal pictures, where users can even choose which animal photo they want to work on. For the sound match game, there's room for improvement; some of the audio clips are too quiet, so we're considering adding an audio slider to let users control the volume.

We also noticed a bug where the sound keeps playing even after moving to the next question, so we're looking to fix this by making the audio play when the mouse is hovering over the audio icon, and making the audio stop when it is not hovered on. We plan to make the correct and incorrect icons clearer as in the recent user testing, users were a bit confused about the distinction of the icons. For the quiz, it would be useful to show how many questions there are (e.g., "1/5") to give users a better sense of progress. Based on the most recent round of user testing, we will be implementing these suggestions and other improvements to enhance the overall user experience.



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