Title: Adventures in Ancient Teeth: Unveiling the Secrets

Name of the Group: Rumi

Name of the Participants:

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1. The Context

(a) The museum and its content/collections:

The Capellini Museum in Bologna is a renowned institution dedicated to paleontology. Its collection includes a vast array of fossilized remains, with a special emphasis on fossil teeth. These artifacts provide valuable insights into ancient ecosystems and evolutionary patterns.

(b) The location and its map/plan:

The Capellini Museum is situated in the heart of Bologna, Italy, near the city center. It is easily accessible to visitors, and a detailed map will be provided to guide their visit. ( we have to determine the exact location of fossil according to map )

(c) Institutional Goal:

The institutional goal of the Capellini Museum is to promote public engagement and understanding of paleontology and its relevance to our understanding of Earth's history. The museum aims to foster a sense of wonder and appreciation for the natural world through interactive experiences.

(d) Cognitive Goals:

1. Increase Knowledge: To enhance children's knowledge and understanding of paleontology, specifically focusing on the significance of fossil teeth in reconstructing ancient ecosystems and evolutionary patterns.

2. Foster Critical Thinking: To encourage children to think critically and analytically about the relationship between geology, paleontology, and the natural world, particularly in terms of the connections between humans and the environment.

3. Promote Scientific Inquiry: To stimulate children's curiosity and encourage them to ask questions, explore evidence, and engage in scientific inquiry related to fossil teeth and their relevance to our understanding of Earth's history.

4. Develop Appreciation: To cultivate an appreciation for the beauty, complexity, and diversity of ancient life forms, as revealed through the study of fossil teeth.

(e) Star Assets (must-see of the museum):

1. Collection of Megalodon shark teeth (Image: [insert image link])

2. Collection of dinosaur teeth (Image: [insert image link])

3. Ancient hominid tooth collection (Image: [insert image link])

In the case of the Capellini Museum, the Star Assets could include:

1. Collection of Megalodon shark teeth: This collection showcases fossilized teeth from the extinct Megalodon shark, one of the largest and most powerful predators to have ever existed. These teeth are known for their impressive size and serrated edges, offering insights into the prehistoric marine world. [Insert image link to showcase the Megalodon shark teeth collection]
2. Collection of dinosaur teeth: This exhibit features a diverse range of dinosaur teeth, highlighting the varied shapes, sizes, and adaptations of these ancient reptiles. The collection may include teeth from different dinosaur species, providing visitors with a glimpse into the incredible diversity of prehistoric life. [Insert image link to showcase the dinosaur teeth collection]
3. Ancient hominid tooth collection: This collection focuses on the teeth of ancient hominids, such as early human ancestors. It presents a unique opportunity to explore the dental remains of our evolutionary relatives, shedding light on human evolution, behavior, and adaptation over time. [Insert image link to showcase the ancient hominid tooth collection]

(f) Target Audience:

Target Audience: 1 - Schools (Children aged 8-12)

2. The Audience

(a) Motivations:

Children aged 8-12 are motivated by curiosity, hands-on experiences, and the opportunity to learn new things. They enjoy interactive and engaging activities that make learning fun and memorable.

(b) Barriers:

1. Limited Attention Span: Children in this age group may have limited attention spans, and it is crucial to design engaging and interactive experiences that capture and maintain their interest.

2. Age-appropriate Language and Content: The language and content should be tailored to the age group to ensure comprehension and engagement.

(c) Capabilities:

Children aged 8-12 are familiar with digital technologies and comfortable using smartphones, tablets, and interactive touchscreens. They enjoy interactive experiences, multimedia content, and gamified activities.

(d) Devices:

Children aged 8-12 will primarily use tablets or interactive touchscreens within the museum to engage with the digital experience. The application should be user-friendly and intuitive for children to navigate.

3. Concept

(a) Problem(s):

The project aims to overcome the limited attention span of children aged 8-12 and provide an engaging and educational experience centered around fossil teeth, capturing their interest in paleontology.

(b) Project Solution:

Our project will create an interactive and immersive digital experience that focuses on the fascinating world of fossil teeth. Through gamified activities, interactive storytelling, and age-appropriate content, we aim to captivate children's attention and foster their curiosity and understanding of paleontology concepts.

(c) Museological Approach:

The museological approach will combine scientific accuracy, hands-on learning, and storytelling to create an immersive

4.Requirements:

Requirements:

(a) Must:

- User-friendly and intuitive interface for children aged 8-12, with simple navigation and clear instructions.

- Interactive and engaging activities, including games, puzzles, and quizzes, to capture children's interest and promote active learning.

- Compatibility with common devices such as tablets or smartphones, ensuring smooth performance and responsiveness.

- Accessibility features to accommodate children with disabilities, such as adjustable font sizes, audio descriptions, and color contrast options.

(b) Should:

- Incorporate gamification elements, such as points, badges, and levels, to enhance the learning experience and motivate children to progress.

- Provide educational content related to fossils, teeth, and paleontology, presented in a fun and informative way with age-appropriate language.

- Include a progress tracking system to monitor children's achievements and provide feedback on their learning progress.

- Support multiple languages to cater to international visitors and enhance accessibility.

(c) Could:

- Offer interactive quizzes or challenges to test children's knowledge and reinforce key concepts.

- Include augmented reality features to bring fossils to life, allowing children to virtually interact with 3D models and see them in their surroundings.

- Integrate social sharing functionalities, allowing children to share their experiences, achievements, and favorite findings with friends and family.

(d) Won't:

- Require complex technical setups or expensive hardware, ensuring accessibility and ease of use for children.

- Include excessive text or use difficult scientific terminology, opting for visual aids and simplified explanations to enhance understanding.

5. Ideation:

(a) Experience (from the users' perspective):

- Children will embark on a virtual journey through the fascinating world of fossils and teeth, discovering the wonders of paleontology.

- They will actively participate in interactive games, puzzles, and quizzes, fostering hands-on learning and critical thinking.

- Through engaging activities, they will learn about different types of fossils, their formation processes, and the significance of teeth in paleontology.

(b) Conceptual map:

- The interactive application will feature distinct sections dedicated to different types of fossils (e.g., dinosaurs, marine creatures) and types of teeth (e.g., carnivores, herbivores).

- Each section will offer a variety of interactive activities, educational content, and multimedia resources, such as images, videos, and 3D models.

- Children can freely navigate between sections and explore their favorite topics.

(d) The story:

- The interactive narrative using Twine will guide children through various scenarios and challenges, making their learning experience immersive and engaging.

- They will encounter virtual paleontologists, solve mysteries, and make choices that impact their virtual journey and learning outcomes.

(f) Interaction between the application and users:

- Interaction Diagram: A visual representation illustrating how children will navigate, interact, and engage with the application's features, including buttons, menus, and interactive elements.

(g) Foreseen workflow:

- Children will launch the application and be greeted by a playful and inviting interface.

- They can choose their preferred language and customize their virtual character/avatar.

- They will explore different sections, select topics of interest, and engage in interactive activities, games, and quizzes.

- Their progress and achievements will be tracked, providing a sense of accomplishment and encouraging further exploration.

(h) Set-up:

- Hardware: The application should be compatible with commonly used tablets and smartphones, ensuring broad accessibility.

- Software: Development tools and frameworks suitable for creating interactive applications for mobile devices.

- Media: Digital assets, including high-quality images, videos, and 3D models of fossils and teeth, to enhance the learning experience.

(i) Further development and maintenance issues:

- Consider future updates to add new content, activities, or features based on user feedback and emerging educational trends.

* Regular maintenance to ensure compatibility with new devices, operating system updates, and security patches, providing a seamless experience for users.

6. Disruption:

* Identify potential challenges, such as technical limitations or time constraints, that may arise during the development and implementation phases.
* Outline strategies to overcome these challenges, such as conducting thorough testing, allocating sufficient resources, and seeking technical support if needed.

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