DIGIEDUHACK SOLUTION CANVAS

Title of the solution: The Baltic Plankton Explorer

Challenge addressed: Raising Awareness of Planktons

Team name: Thalassir

Challenge category: Game/Interactive Story

Background of the team:
(multiple selections possible in case of mixed teams)

- [ ] Higher Education Students
- [ ] Teachers
- [ ] Others (please specify)
- [x] Researchers
- [ ] Primary School Students
- [x] Professionals
- [ ] Secondary School Students

Describe it in a tweet

How would you describe your solution in a short catchy way with maximum 280 characters?

Turn the Baltic Sea into a living story. Students control plankton levels and discover how balance keeps the ocean alive - and how imbalance causes chaos. Science that clicks instantly.

Innovativeness

What makes your solution different and original? Are there similar solutions or approaches currently available or implemented by education sector practitioners? If so, why and to what extent is your solution better?

Our solution is original because it turns plankton science into an interactive ecosystem simulation where students instantly see how the Baltic Sea changes at low, balanced, and bloom conditions.

Unlike existing materials which are mostly infographics, worksheets, or linear videos, ours combines real-time visual feedback, a narrative guide (Professor Plankton), and a built-in quiz.

Transferability

Can your solution partly or fully be used in other education/learning contexts or disciplines? Could you provide any example?

Yes. The same interactive browser based "slider + real-time visual change" format can be used in many other learning contexts. The core idea letting students adjust a variable and instantly see the outcome, works across disciplines.
For example, it could be adapted to show air pollution levels in cities, forest cover and wildlife health, water usage and drought effects, or even carbon emissions vs. global temperature. The platform can host multiple quests, each turning a complex topic into a simple, visual cause-and-effect experience.

Solution description

What is the final product/service/tool/activity you're proposing? What are its main elements, technologies and objectives? Could you please include a brief implementation plan with some key overall milestones, resources required and eventual barriers foreseen? How could your solution be used to enhance digital education nowadays? How could its success be measured?

We propose The Baltic Plankton Explorer - a digital, interactive learning tool designed for students to understand how plankton levels impact the overall Baltic Sea ecosystem.
It transforms marine ecology into a hands-on visual experience where students adjust a slider to see real-time changes in fish life, water quality, oxygen levels, and plankton behaviour.
The tool combines storytelling, science and interactivity to teach core concepts of the Blue Economy, nutrient pollution, and ecosystem balance.

Main elements
- Interactive slider-based ecosystem simulator where Students adjust plankton levels (low → balanced → high) and the background ecosystem video changes instantly.
- Professor Plankton story guide - A friendly character introducing the problem and explaining the science in simple narrative.
- End-of-quest quiz - Reinforces learning outcomes with few questions.

Implementation Plan
- Phase 1: Build UI, slider logic prototype (done)
- Phase 2: Take inputs from pedagogy experts to refine solution
- Phase 3: Add Professor Plankton story + enhance reflective quiz
- Phase 4: Classroom test and refinement

How it enhances digital education - Turns passive learning into interactive cause-and-effect exploration.
Success metrics - Engagement time, pre/post learning improvements.

Target group

Who is/are the target group/s of your solution and how will they benefit from it? Why is your solution relevant to them? how do you plan to engage these groups so you fully meet their specific needs?

Target Group & Why It Matters
Our primary target group is students aged 11–14. This age range is ideal because they learn best through visual, interactive, story-driven experiences but often find marine ecology abstract or difficult to grasp.
Our solution uses familiar formats - games, animated characters, simple narratives, and instant visual feedback to make a complex topic (plankton balance and Baltic Sea health) engaging, memorable, and emotionally relatable.
Relevance
Students already consume digital content daily, so presenting environmental science in the same playful, intuitive format makes it far more accessible and meaningful to them.
Engagement Plan
We plan to refine the tool with pedagogy experts, and introduce it to classrooms through Baltic and Nordic environmental organisations that already collaborate with schools. This ensures the experience fits real learning needs and reaches students through trusted educational channels.

Sustainability

Once you have a prototype, what are your plans for a further development, implementation upscale and replication of the solution? How do you see it working in the mid- and long term?

Our v1 of the prototype is ready - https://plankton-quest-baltic.lovable.app/story
Our next step is to expand it into a small library of environmental quests, each using the same interactive format but focused on different sustainability topics. We plan to refine the tool with feedback from teachers and pedagogy experts, and then pilot it in a few Baltic and Nordic schools through existing environmental education networks. We see the platform becoming a scalable digital resource for teachers and facilitators in the long term

Impact

How will your solution catalyse changes in education and what impacts will it have at social and environmental level? Could you provide examples or scenarios illustrating how such changes and impacts might unfold?

Our current solution is a single explorer focused on plankton, but it can grow into a broader environmental questing platform with multiple interactive experiences on different Blue economy topics. Each quest can be co-created with subject-matter experts to ensure scientific accuracy and engaging narratives.

The platform can also support offline field trips and classroom activities, turning digital exploration into real-world learning. These quests help students understand environmental issues through simple simulations, giving them a stronger sense of ownership, responsibility, and agency in protecting their ecosystems.

Example: A class uses the slider to see how high plankton levels create murky water and struggling fish. Students immediately grasp the cause-effect chain and explore ways to restore balance.
This can be a good prompt to discuss how reducing fertiliser runoff or improving waste management can help maintain balance in the ecosystem.

Team work

Present the members of your team. Why are you the perfect team to develop this work and what are the competencies you all bring in so the solution is developed successfully? What is your expertise within the thematic field concerned? Are you planning to continue working as a team in the future? If so, why?

Team members:
Shrikar Parashar - Facilitator and AI Consultant
Ghazala Ismaeel - Research Assistant
Ismail Khasmani - Cultural exchange facilitator

We're the right team for this because we understand both how students learn and how to build digital products quickly. We plan to continue working together after the hackathon to expand this into a full environmental questing platform, collaborating with educators and subject-matter experts to create more interactive experiences around marine ecology and sustainability.

Context

What is the current or future problem you're trying to solve? How does your solution align with DigiEduHack 2025 annual theme? How does your solution confront the challenge posed by the hackathon organiser and how does it address the challenge category?

Problem - Kids are either unaware or struggle to understand how plankton imbalances harm the Baltic Sea because the processes are invisible and hard to visualize.
Alignment with DigiEduHack - Our tool supports the theme of digital, engaging learning for sustainability by turning complex marine ecology into an interactive, visual experience.
How It Addresses the Challenge - The hackathon asks for solutions that raise Baltic Sea awareness.
Our slider-based simulator shows low, balanced, and high plankton levels through cause and effect, helping students clearly see the ecological impact.
It's simple, digital, kid-friendly - and directly teaches Blue Economy concepts.