

Learning Scenario 11 - Saving Sea Turtles: A Campaign for Cyprus' Wildlife

Learning Scenario Information	
Title	Saving Sea Turtles: A Campaign for Cyprus' Wildlife
Age Level	10-12 years old
Duration	45 minutes
Informatics topic areas	Digital Creativity
Content domain (Integrated Subjects)	Science, Geography, Art, Technology, Language Arts
Learning Objectives	<p>Upon completing this activity, the students should be able to:</p> <ul style="list-style-type: none"> • Research and summarise key challenges faced by sea turtles in Cyprus, particularly due to climate change. • Use digital tools to create an engaging multimedia campaign. • Develop persuasive messages and visuals to inspire conservation efforts. • Present the campaign and justify creative choices in design and messaging.
Scenario Description	
Setting	<p>In Cyprus, sea turtles like the Loggerhead and Green Turtle are critically endangered due to threats such as climate change, habitat destruction, and pollution. Rising sand temperatures caused by global warming have skewed gender ratios, while coastal development has disrupted nesting sites. Your school has been invited to support these efforts by designing an impactful campaign to inform the public about the importance of protecting sea turtles. You, as a teacher, want to guide your students to create a digital campaign to raise awareness and encourage local actions to protect these turtles and their habitats.</p>
(Digital) Tools	<ul style="list-style-type: none"> • Canva (https://www.canva.com/) for creating infographics and visuals. • Tablets or computers with internet access. • Research materials and websites (e.g., Climate Change Adds to Plight of Endangered Sea Turtles, Terra Cypria). • <i>Optional:</i> Microphones or video-editing tools for recording voiceovers.
Activity	<p>Step 1 (10 minutes): Introduce the Problem</p> <ul style="list-style-type: none"> • Start with a discussion based on the article, Climate Change Adds to Plight of Endangered Sea Turtles in Cyprus, such as:

	<ul style="list-style-type: none"> ○ Share key points about how rising sand temperatures are causing a disproportionate number of female hatchlings and how habitat destruction impacts nesting beaches such as Lara and Akamas. ○ Discuss conservation efforts like protecting nests and reducing light pollution. Encourage students to reflect on the direct connection between human actions, climate change, and the survival of these species. ● Encourage students to reflect on these challenges and share their thoughts: <ul style="list-style-type: none"> ○ <i>How does climate change affect the survival of sea turtles?</i> ○ <i>What actions could communities in Cyprus take to help?</i> ● Transition to group work by dividing students into mixed-gender teams, assigning each group a specific issue (e.g., temperature shifts, coastal development and tourism impacts, plastic pollution, light pollution), and preparing them for deeper research. <p>Step 2 (10 minutes): Research and Brainstorm</p> <ul style="list-style-type: none"> ● Students use online resources and provided materials to research their assigned topic. Encourage them to focus on: <ul style="list-style-type: none"> ○ <i>Real-life examples from Cyprus.</i> ○ <i>Existing conservation strategies and their effectiveness.</i> ○ <i>Diverse conservationists and their work.</i> ● Each group brainstorms ideas for their campaign, deciding on slogans, visuals, and target audiences (e.g., local residents, tourists, government bodies). <p>Step 3 (25 minutes): Design and Present the Campaign</p> <ul style="list-style-type: none"> ● Students create their multimedia campaigns using Canva. Their campaigns should include: <ul style="list-style-type: none"> ○ A catchy slogan (e.g., “Cool Sands, Balanced Turtles”). ○ At least one infographic summarising their research findings. ○ A call-to-action encouraging specific steps like avoiding plastic, reducing light pollution, or donating to conservation efforts. ○ <i>Optional:</i> Students can add a short video or audio message to amplify their message. ● Each group presents their campaign to the class. They explain their design choices and how they hope to inspire action. ● Ask students to reflect on what they learned and brainstorm ways to share the campaigns, such as through school displays, social media, or local community events.
Teachers and students’ Roles	<p>Teachers:</p> <ul style="list-style-type: none"> ● Provide background information and facilitate discussions. ● Support students with research and using digital tools. ● Guide group collaboration and offer constructive feedback during presentations. <p>Students:</p> <ul style="list-style-type: none"> ● Research and summarise information on their assigned topic. ● Collaborate in groups to create a digital campaign. ● Present their work and reflect on their learning.

Evaluation/ Assessment	<ul style="list-style-type: none"> Assess the accuracy and creativity of the campaigns using a rubric. Evaluate group collaboration and the effectiveness of the messages. Observe student engagement during discussions and presentations.
THINKER Framework Integration	
How is the activity authentic learning?	The activity links directly to real-world conservation challenges in Cyprus, while promoting critical thinking and problem-solving related to environmental sustainability. It also encourages students to create work with a tangible purpose and potential community impact.
How is gender inclusiveness ensured?	The activity encourages mixed-gender groups and ensures all students contribute equally to the project, and highlights examples of male and female conservationists to serve as role models.
Considerations for level progression	<p>For younger or less experienced students, provide templates for infographic layouts and pre-selected facts.</p> <p>For older or more advanced students, encourage designing interactive elements or conducting deeper research into local conservation policies.</p>

Learning Scenario 1 - Code My Day: Sequencing Everyday Tasks

Learning Scenario Information	
Title	Code My Day: Sequencing Everyday Tasks
Age Level	10-12 years old – (Primary Cycle Stage 4 – Students in Grades 5 & 6)
Duration	45 minutes
Informatics topic areas	Programming
Content domain (Integrated Subjects)	Mathematics, Language Arts, Logic
Learning Objectives	<p>Upon completing this activity, the students should be able to:</p> <ul style="list-style-type: none"> Organise daily tasks in a logical sequence using programming terms like “step-by-step” and “sequence.” Create a simple flowchart representing steps to complete a routine task. Describe how breaking down tasks into sequences relates to programming concepts.
Scenario Description	
Setting	<p>Imagine students are helping a robot “learn” how to do a task they complete every day (like brushing their teeth, packing a school bag, or making a sandwich). They need to break down each step in the process and ensure that the instructions are clear and specific. Encourage students to think of common daily routines as sequences that need clear instructions. Ask them, “How can you make sure your instructions are easy for the robot to follow?”</p>
(Digital) Tools	<ul style="list-style-type: none"> Worksheet for sequencing steps in a daily routine. Paper and markers to create simple flowcharts. Optional: Laptops with simple block-based coding apps (e.g., Scratch).
Activity	<p>Step 1 - Unplugged Exploration (10 minutes): Introduction to Sequencing</p> <ul style="list-style-type: none"> Explain the concept of breaking down tasks and sequencing steps in a way that can be easily followed. Video from Kodable can be used: https://www.youtube.com/watch?v=v_Pc3UnePZY Share examples of how computers need exact steps to function correctly. <p>Step 2 – Unplugged Exploration (10 minutes): Task Breakdown</p> <ul style="list-style-type: none"> Split the students into small groups.

	<ul style="list-style-type: none"> In groups, students pick a daily task (e.g., brushing teeth) and write down each step in the process. Encourage students to be specific, thinking like a robot who doesn't know the task yet. <p>Step 3 (15 minutes): Create a Flowchart</p> <ul style="list-style-type: none"> Using paper and markers, students turn their list of steps into a simple flowchart to represent each action. Emphasise clarity and sequence in their charts. <p>Step 4 (10 minutes): Reflection and Connection to Programming</p> <ul style="list-style-type: none"> Discuss as a class how their flowcharts resemble the way programmers write code. Ask questions like, "What would happen if a step were out of order?"
Teachers and students' Roles	<p>Teachers: Introduce the concept of sequencing and help students organise their thoughts. Facilitate flowchart creation and guide students to consider the importance of step order.</p> <p>Students: Work collaboratively to sequence a task, design a flowchart, and reflect on their learning. Explain their flowchart steps and discuss the importance of sequence.</p>
Evaluation/ Assessment	<ul style="list-style-type: none"> Flowchart Review: Assess the clarity and order of steps in each student's flowchart. Discussion Participation: Observe students' engagement in discussing the importance of sequencing.
THINKER Framework Integration	
How is the activity authentic learning?	The activity links programming concepts to real-life routines, making abstract programming skills more relatable for young learners.
How is gender inclusiveness ensured?	The task choice is open-ended, allowing students to select a routine that interests them, and the collaborative format encourages equal participation.
Considerations for level progression	<p>For younger or less experienced students (beginner level), use a predefined task with basic steps provided and focus on sequencing.</p> <p>For older or more advanced students (advanced level), allow students to use Scratch or a similar block-based coding tool to simulate the task digitally, introducing basic programming commands like loops or conditionals if appropriate.</p>

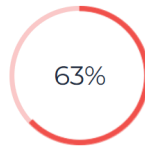
Learning Scenario 12 - Staying Safe Online

Learning Scenario Information	
Title	Staying Safe Online
Age Level	11-12 years old
Duration	30 minutes
Informatics topic areas	Privacy, Safety, Security
Content domain (Integrated Subjects)	Social Studies, Technology
Learning Objectives	<p>Upon completing this activity, the students should be able to:</p> <ul style="list-style-type: none"> Identify common online risks (e.g., phishing, cyberbullying, data breaches). Explain strategies to protect personal information and avoid online threats. Demonstrate safe online behaviour in a role-playing activity.
Scenario Description	
Setting	One of your students reports receiving suspicious messages online. You want to take this opportunity to discuss this topic with your class and teach your students how to identify online risks and stay safe while using the internet.
(Digital) Tools	<ul style="list-style-type: none"> An online global or national article with data on online risks for students (e.g., DQ Institute's 2023 Child Online Safety Index (COSI) report or Children's Wellbeing in a Digital World Index Report 2024) Role-play scenario cards or prompts Projector or digital whiteboard
Activity	<p>Step 1 (10 minutes): Identify common online risks</p> <ul style="list-style-type: none"> Start by showing an engaging online article or infographic with global or national data on online risks for students. For example, the following data from the <i>Children's Wellbeing in a Digital World Index Report 2024</i> (Tip: You can select specific information that you want to present students with and also translate the content into your national language)

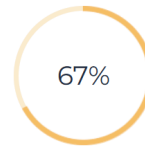
Important findings in the Year 3 report

Our survey shows an increasing use of tech devices that coincides with growing concerns about screen time interfering with family time.

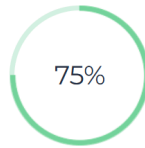
However, it's not all negative. In fact, the research shows that, overall, children's digital wellbeing has improved over the last year.



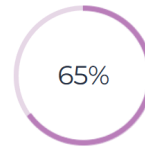
63% of parents believe time online negatively impacts their children's health.



2/3 of children report experiencing online harms.



75% of children view technology and the internet as important to their independence.



2/3 of children say spending time online makes them feel mostly happy.

- Discuss key statistics, such as the percentage of students that are experiencing online harms (67%).
 - *"How do the statistics you've seen compare with your own experiences or what you've heard from friends? Are they surprising to you? Why or why not?"*
- On a shared board (physical or online, e.g. PADLET) ask students to share and discuss risks they are aware of or relate to their personal experience.
 - *"Why do you think certain online risks, such as cyberbullying or exposure to inappropriate content, are more common among students? What makes these risks particularly challenging to avoid?"*
- As a second part of this discussion, highlight key features of effective systems, such as simplicity, security, and accessibility.
 - *"What steps do you think individuals can take to protect themselves from these online risks? Are there specific actions or behaviours that you think are most effective?"*
 - *"How can online platforms balance accessibility and simplicity with the need for security? Are there any examples of platforms that do this well?"*

Step 2 (20 minutes): Design Phase

- Divide students into mixed-gender groups and give each group a role-play scenario (e.g., someone receives a suspicious email, faces cyberbullying, or is asked for personal information). Ensure your scenarios include gender-inclusive language and avoid stereotypes.
- Students act out the scenario and decide on the best course of action based on strategies for staying safe online.
- Each group presents their scenario and solution to the class.
- End with a discussion on how to apply these strategies in real life and identify trusted adults or resources for help.

	<ul style="list-style-type: none"> - “Have you ever encountered a similar situation online? How did you handle it at the time?” - “What are some specific strategies that you can use in your own life to stay safe online?” - “Who are the trusted adults or resources you would turn to if you found yourself in a risky online situation?” - “How do you know when it's time to seek help from a trusted adult rather than trying to resolve the issue on your own?”
Teachers and students’ Roles	<p>Teachers:</p> <ul style="list-style-type: none"> • Select and share the online article/data and explain its relevance. • Facilitate discussions and guide students through role-playing. <p>Students:</p> <ul style="list-style-type: none"> • Engage with the online data, actively participate in group discussions, and demonstrate safe online behaviour during the role-play activity.
Evaluation/ Assessment	<ul style="list-style-type: none"> • Observe group discussions and role-playing for understanding of online risks and appropriate responses. • Use a quick class poll or quiz to check comprehension of key strategies. <p>Example:</p> <ol style="list-style-type: none"> 1. If you receive a suspicious email asking for personal information, it is safe to click on the links to investigate further. (false) 2. It’s important to report cyberbullying incidents, even if they seem small or harmless, to a trusted adult or resource. (true) 3. Sharing personal information, such as your address or phone number, with someone you’ve only met online is generally safe if they seem trustworthy. (false)
THINKER Framework Integration	
How is the activity authentic learning?	The activity provides real-world context through global statistics on online risks and practical role-play scenarios.
How is gender inclusiveness ensured?	The activity ensures that the online article/data includes diverse perspectives and examples, and provides scenarios that avoid stereotypical roles. It also encourages equal participation in the role-play activity assigning roles that avoid gender stereotypes
Considerations for level progression	<p>For younger or less experienced students, use simplified scenarios and provide a handout summarising online safety tips.</p> <p>For older or more advanced students, encourage them to create a short guide or a campaign video on online safety to share with younger students or their community.</p>

Learning Scenario 7 - The sun-catcher - Find the patterns in a function

Learning Scenario Information	
Title	The sun-catcher - Find the patterns in a function
Age Level	8-10 years old
Duration	45 minutes
Informatics topic areas	Algorithms, Computing Systems
Content domain (Integrated Subjects)	Mathematics, Technology
Learning Objectives	<p>Upon completing this activity, the students should be able to:</p> <ul style="list-style-type: none"> • Learn what a pattern is and how to find patterns in processes • Interpret symbols as they relate to physical manipulatives • Practicing art as a way to communicate science • Learn more about definition and understanding of Functions, definition of patterns • Understand the link between patterns and functions
Scenario Description	
Setting	<p>You want to introduce your students to coding and do it in a more engaging, hands-on and playful way to reduce the fear of failure of some students struggling with technology and abstraction.</p> <p>In this lesson, students will create a sun-catcher using string nuts, and beads following repetitive steps. Creating their sun-catchers, working in pairs, they will identify repeated "patterns" which will be called from a main program and recorded on a single sheet of paper.</p>
(Digital) Tools	<ul style="list-style-type: none"> • Projector and laptop • Whiteboard • Sun-catcher boxes for your students - each box should contain: a string or fishing line per student, 2-4 charms + 2-4 other accessories (buttons, hoops, nuts, beads), 2-4 spacers, 1 special beam or button) • Pens, Pencils, & Scissors • One Working Sheet per group to write the patterns and actions done in two columns and with an additional column to write the complete function at the

	end of the activity
Activity	<p>Step 1 (10 minutes): Introduction to Pattern and Functions Using Real-Life Examples</p> <ul style="list-style-type: none"> Explain to the students the meaning of “function and patterns” starting from one of your daily actions - having a coffee or brushing your teeth are common daily functions. Write the steps of the chosen function on the whiteboard → <ul style="list-style-type: none"> - take the toothbrush - take the dentifrice - open the dentifrice tube - put the paste on the toothbrush - brush your teeth - turn on the tap - rinse your mouth - turn off the tap - clean your toothbrush - put away the toothbrush - close the dentifrice tube - put away the dentifrice tube Present students with the video “FUN-ction.” (4 '30” total but from the time 0 to the time 1' 45” is the relevant part for this introduction, you can stop the video at 1 '40”). Ask your students to tell you what they do each day and ask them to explain the process step by step. Write the steps on the whiteboard → if needed you can give them suggestions: set the table for the dinner, pack the backpack, have a shower... Explain that a function is a single action, that you can easily do over and over again, made by some well-defined and repeated steps. - recall the actions done and described by one of your students. <p>Step 2 (20 minutes): Understanding</p> <ul style="list-style-type: none"> Show to the students a sun-catcher made by you before and use it to explain to the class how the sun-catcher is made. Write on the whiteboard all the steps you did while you told them: e.g.: First, I put a button on the string, then I tied a knot. After that, I did it all again. I put a spacer on the string, and tied another knot. Then, I put a beam on the string and tied another knot... N.B.--> in THIS VIDEO you can find a short description about how you can make your own suncatcher. Ask each group of students (in this activity a group of two or three is good) to create their sun-catchers. In the meantime they can also fill in the working paper writing the list and sequence of actions in one of the columns + the list and sequence of elements (beads, charms...) in the other one. <p>Step 3 (15 minutes): Group Reflection and Discussion</p> <ul style="list-style-type: none"> Introduce the terms <i>function</i> and <i>pattern</i> in a more technical way:

	<ul style="list-style-type: none"> ○ Function: a block of code that defines a sequence of steps or commands, such as movement - recall the sequence of actions done to create the sun-catcher. ○ Pattern: Introduce the term by analysing the differences in your sun-catchers (e.g. 2 red beads each 2 buttons or a spacer each 3 nuts and 2 charms...) and also in the actions done to introduce them to identify similarities between decomposed problems.. ● Ask to your students to find in their sun-catchers the patterns (both elements and actions) and discuss them together ● Ask each group to write in the third column the “Function of my sun-catcher” putting together in sequence the actions and the elements. You can discuss and comment together one or two examples from them. Focus on the pattern recognitions and the meaning of function to solve the problem “create a sun-catcher”. ● Ask your students to find patterns in different contexts, you can suggest them to work with the daily activities such as brushing their teeth, preparing a sandwich,...
Teachers and students’ Roles	<p>Teachers:</p> <ul style="list-style-type: none"> - Guide the students through the initial examples - Assist them in writing their lists of actions and elements to create the function. - Supervise each activity, encouraging students to reflect on patterns. <p>Students:</p> <ul style="list-style-type: none"> - Act as creator of the sun-catcher. - As coders they write a function to design the sun-catchers
Evaluation/ Assessment	<ul style="list-style-type: none"> ● Observe student participation during each activity phase and how they interact between them. ● Evaluate each group’s ability to design a well detailed function with a clear description of patterns.
THINKER Framework Integration	
How is the activity authentic learning?	The activity uses hands-on activities. Students explore and design a function and a set of patterns in a tangible environment, making the abstract concepts more concrete.
How is gender inclusiveness ensured?	This activity encourages collaboration in mixed-gender teams, promotes equal participation, and avoids gendered roles, promotes the use of arts in coding and encourages different creative languages.
Considerations for level progression	To level up with this activity you can challenge your students to increase the pattern of the suncatcher adding more elements and replicating patterns.