

# Exploring Europe: Mapping European Countries and Capitals

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**TOPIC:** Geography - European countries and capitals

**GRADE:** 6th grade

**APPROACH:** Project-based learning, Interactive mapping

**DURATION:** 2 weeks

**Summary:** This transdisciplinary learning scenario combines geography and coding by using a Europe map as the board for coding robots. Students will explore the countries and capitals of Europe while developing coding skills. They will collaborate in groups to program the robots to identify and locate European countries and their capitals. This hands-on approach promotes active engagement, critical thinking, and cross-curricular connections.

## Learning Objectives, Skills and competencies:

What are the main objectives? What skills will the learner develop and demonstrate within the scenario? (e.g. 21st Century Skills).

- Identify and locate European countries and their capitals.
- Develop coding and programming skills.
- Foster collaboration, critical thinking, and problem-solving abilities.
- Enhance spatial awareness and map reading skills.
- Promote cross-curricular connections between geography and technology.

## Learners' role:

What sort of activities will the learner be involved in?

Work collaboratively in groups to program the robots.

Explore the Europe map, identifying and locating countries and capitals.

Discuss and share insights, strategies, and challenges with group members.

Reflect on the process and make adjustments to improve robot coding and accuracy.

## Tools and Resources

What resources, particularly technologies, will be required?

- Europe map (physical or digital)
- Coding robots (e.g., Bee-Bot, LEGO Mindstorms, Dash and Dot)
- Coding mats or stickers to represent countries and capitals on the map
- Laptops or tablets for programming the robots
- Worksheets or notebooks for recording information and reflections

## Learning space

Where will the learning take place e.g. school classroom, local library, museum, outdoors, in an online space?

The learning will primarily take place in the classroom, where students can work in groups and have access to the Europe map, coding robots, and necessary technology. The classroom setup should allow for collaboration, discussion, and movement as students program and navigate the robots on the Europe map.

## Far Beyond the Barriers Scenario Narrative

Describe in max 10 sentences the main ideas of the scenario

**Introduction (1 day):** The teacher introduces the topic of European countries and their capitals, providing background information and engaging students in a discussion about the importance of geography and mapping skills. Students are introduced to the coding robots and the Europe map.

**Group Formation and Exploration (2 days):** Students are divided into groups and assigned a coding robot. Each group explores the Europe map, familiarizing themselves with the countries and capitals. They identify the major countries and their capitals, discussing notable features and facts about each.

**Coding and Programming (5 days):** In their groups, students program their robots to navigate the Europe map and locate the countries and capitals. They use coding mats or stickers to represent countries and capitals on the map. Students collaborate, discuss strategies, and debug their code as they refine the robot's movements and accuracy.

**Practice and Refinement (3 days):** Students practice running their coded programs and make adjustments as needed. They reflect on the challenges encountered and find innovative solutions to improve the robot's performance. The teacher provides guidance and support as students iterate on their coding and problem-solving skills.

## FAR BEYOND THE BARRIERS SCENARIO

**Presentations and Assessments (2 days):** Each group presents their coding project to the class. They demonstrate the robot's ability to navigate the Europe map, identify countries, and announce their capitals. Peers ask questions and provide feedback. The teacher assesses students' knowledge of European countries and their capitals, as well as their coding and presentation skills.

**Reflection and Discussion (1 day):** Students engage in a reflective discussion, sharing their experiences, challenges, and successes throughout the project. They discuss the importance of geography, coding, and their connections to real-world applications. The teacher facilitates the discussion and highlights key takeaways from the project.

### Learning Activities

#### Warm-up activity

Engage students in a geography-related warm-up activity, such as a short quiz or a discussion about European landmarks or cultural aspects.

##### 1. Short Quiz:

Prepare a short quiz consisting of multiple-choice or true/false questions related to famous European landmarks or cultural aspects. The questions can cover landmarks like the Eiffel Tower, Colosseum, Acropolis, or cultural aspects such as traditional dances, popular cuisines, or famous artists from different European countries. Students individually answer the quiz questions, and the teacher can review the answers as a class, discussing the correct responses and providing explanations.

##### 2. Discussion about European Landmarks or Cultural Aspects:

Facilitate a whole-class or small-group discussion about famous European landmarks or cultural aspects. Provide a list of landmark names or cultural aspects, and students take turns sharing their knowledge and insights about each item. The teacher can guide the discussion by asking questions such as:

Have you heard of this landmark or cultural aspect before?

What do you know about it? Where is it located?

Why is it significant or important?

## FAR BEYOND THE BARRIERS SCENARIO

	<p>Encourage students to contribute their thoughts, ask questions, and share any personal experiences or connections they may have with the landmarks or cultural aspects being discussed.</p>
Collaborative work	<p>In this collaborative work phase, students are divided into groups, typically consisting of 3-4 members, and each group is assigned a coding robot and a Europe map. The groups work together to program their robots using the provided coding mats or stickers representing countries and capitals on the map. The goal is for the robots to accurately navigate the map and identify the countries and their corresponding capitals.</p> <p>During the collaborative work, students engage in the following activities:</p> <p><b>Planning and Strategy Development:</b> The group members discuss and plan their coding strategy. They analyze the Europe map, identify the starting and target locations, and determine the steps required for the robot to move from one country to another. They brainstorm ideas, consider different coding techniques, and decide on the best approach to achieve their goal.</p> <p><b>Coding and Programming:</b> With a shared understanding of their strategy, the group members collaboratively program the robot using the coding language or platform provided. They write the necessary instructions and commands to make the robot move accurately and identify the countries and capitals. They take turns inputting the code and testing it on the map, iterating and refining their code as they encounter challenges or errors.</p> <p><b>Sharing Ideas and Problem-Solving:</b> Throughout the collaborative work, group members actively communicate and share ideas. They discuss their observations, strategies, and challenges, seeking input from one another to improve their coding and problem-solving skills. They brainstorm solutions together, help each other debug errors, and provide support and encouragement as they work towards a common goal.</p> <p><b>Testing and Feedback:</b> After programming the robots, the groups test their code on the Europe map. They observe the robot's movements and check if it correctly identifies the countries and capitals. If any issues arise, they analyze the problem, troubleshoot, and make necessary adjustments to improve the accuracy and efficiency of their coding. They</p>

## FAR BEYOND THE BARRIERS SCENARIO

	<p>provide feedback to each other, suggesting improvements and sharing insights gained from their testing.</p> <p>Collaboration and Teamwork: Collaboration is key during this phase. Students learn to work effectively in a team, respecting each other's ideas, listening actively, and dividing tasks equitably. They practice cooperation, compromise, and effective communication skills as they strive to achieve their common objective.</p>
Investigation work	<p>Students explore the Europe map, research information about different countries and their capitals, and gather relevant data. They analyze the geographical features, population, and cultural aspects of each country to deepen their understanding.</p>
Practice work:	<p>Students practice running their coded programs on the robots and make adjustments based on the feedback they receive. They refine their coding skills, troubleshoot any errors, and improve the robot's performance in locating the countries and capitals accurately.</p>
Producing work	<p>Students document their coding journey and reflect on the process. They create a presentation or a report showcasing their coding project, including the challenges faced, strategies employed, and improvements made. They also share their insights about the geographical and cultural aspects of the European countries they studied.</p>
Discussion	<p>Students engage in discussions within their groups and with the whole class, sharing their findings, observations, and experiences. They discuss the similarities and differences between countries, analyze the significance of capitals, and explore the cultural diversity within Europe.</p>

## FAR BEYOND THE BARRIERS SCENARIO

<p>Presentations</p>	<p>Each group presents their coding project and findings to the class. They demonstrate how their robots navigate the Europe map, identify countries, and announce their capitals. Peers provide feedback and ask questions, fostering a collaborative and supportive learning environment.</p>
<p>Assessment and feedback</p>	<p>The teacher assesses students' knowledge of European countries and capitals through observations, group discussions, and their final presentations. Feedback is provided to each student, highlighting their strengths and areas for improvement in both coding and geographical understanding.</p>
<p>Pedagogical Tips for Teachers Regarding Special Needs of Students with Learning Difficulties</p>	<p>Provide clear and concise instructions: Ensure that instructions for using the coding robots and navigating the Europe map are clear and concise. Use simple language and break instructions into smaller steps.</p> <p>Incorporate visuals: Use visuals and images to support learning, particularly for students who may struggle with verbal instructions. Provide maps, pictures of landmarks, and other visual aids to help students understand and remember information.</p> <p>Provide scaffolding: Break the lesson down into manageable parts and provide scaffolding, such as prompts or sentence starters, to help students organize their thoughts and complete tasks.</p> <p>Allow for extra time: Students with learning difficulties may require extra time to process information, plan their coding, or complete tasks. Plan for this extra time and adjust the pace of the lesson accordingly.</p> <p>Offer alternative assessments: Consider alternative assessment methods, such as verbal responses, written responses, or pictorial representations, to ensure that all students can demonstrate their understanding.</p> <p>Foster a positive and inclusive learning environment: Encourage students to work together, help each other, and celebrate each other's successes. Create a safe and supportive learning</p>

## FAR BEYOND THE BARRIERS SCENARIO

environment that encourages students to take risks and learn from mistakes.

Communicate with parents and support staff: Keep parents and support staff informed about the learning objectives, activities, and progress of students with learning difficulties. Collaborate with parents and support staff to identify and implement effective strategies to support learning.