

From Prototype to Test

AI exploration phase

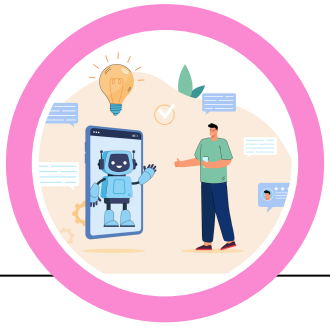
P4 to P6 - Validating, Discussing, Communicating

AI and Exploration Topics. What are we exploring?

Iterative prototyping: improving the build through cycles.
Model testing and edge cases: checking the model against varied and tricky inputs.
Reliability and evaluation: judging process and justification, not only whether it works.
Error and improvement: treating failures as material to improve.
Fit to a real context: whether the solution holds in real conditions.
Explaining the system and ethical reflection: making the chain clear and weighing responsibility.

Materials Needed and to Create. What must be prepared before the activity?

Computer, 1 per group
Robots or equivalents, 1 per group
Test recording template (test case, expected result, observed result, what happened, what we change)
Short presentation guide



Exploration Steps and Description. What do participants actually do?

Groups finish and test their AI + robot prototype with real or simulated cases, then present it, learning that a useful AI is not only one that works but one whose limits and conditions are understood.

Activity 1 - Review what is missing (15 min)

Each group recovers its session-3 prototype from “Designing an AI with a Robot” and plans what is done, what is missing and which tests to run; roles can be shared within the group.

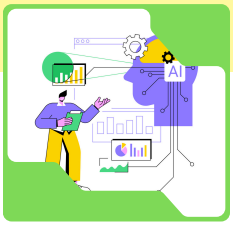
Activity 2 - Prototype (75 min)

Each group advances the **functional build** (train or refine the model, connect the robot action, improve the structure), keeping a **minimum viable product**: a classification that triggers a clear action with an understandable purpose.

Activity 3 - Test and evaluate (40 min)

One member tests the prototype on expected, edge and unexpected cases in front of other groups; tester and observer record whether the model and robot behave as expected, when it fails and whether it stays useful when imperfect.

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Exploration Steps and Description. What do participants actually do?

Activity 4 - Present and share (35 min)

Each group gives a 3 to 4 minute presentation: **project, SDG and problem, who it helps, what the AI recognises, what the robot does, one test that worked, one limit detected and what they would improve**.

Expected Output. What do participants create, produce or gain from the exploration?

A tested and iterated AI + robot prototype presented as a demo day, with documented successes, errors and limits, and a final reflection on usefulness, viability and responsibility, closed with sentences such as "the most important thing we learned about AI is..." and "the main limit of our system is...". Time is left for the final questionnaire.

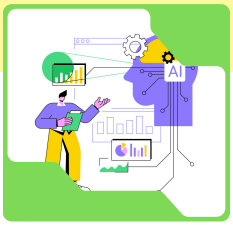
The Hook and the Playfulness. What makes this fun/exciting for young people?

The session runs like a demo day: each group wants its idea to work well enough to demonstrate and defend it in front of the others.

Success indicators. How do we know it worked? What shows participants learned?

- The group treats technology as a process of design, testing and improvement, using a model as part of a wider system.
- It integrates classification, decision and robotic action into a prototype and explains the input then classification then action chain.
- It records tests and adjusts the prototype from results. (Provisional, to review: at least one expected, edge and unexpected case logged, and one change made after testing.)
- It identifies at least one important limit and connects the project to a concrete social benefit with a minimal ethical reflection. (Provisional.)

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Appendix - From Prototype to Test

Appendix 1	Prototype template

Content of the appendix

Prototype template for Activity 2, to make prototyping easier.

Fields on the template

- Names of the group members:
- Project name:
- Problem it solves:
- How it works (diagram):
- Flow: input data, then AI classification, then AI decision, then robot action.



Example of the template used in UAB

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