

Outreach activities in the International Year of Quantum Science and Technology and beyond

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Abstract: The International Year of Quantum Science and Technology, established for 2025, will involve scientists and communicators all around the world in a joint effort to disseminate quantum concept and to enhance quantum awareness. Many of such activities are already ongoing since the establishment of the World Quantum Day in 2022, such as the Italian Quantum Weeks project and involve NQSTI personnel.

Quantum technologies are becoming increasingly integrated into everyday life underscoring the necessity of fostering quantum literacy across society. A baseline understanding of fundamental quantum principles—such as superposition, entanglement, and wave-particle duality—is becoming culturally significant to empower individuals and communities to navigate the opportunities and challenges posed by the second quantum revolution.

Outreach efforts designed to build quantum literacy leverage a wide range of strategies and tools. On the one hand, digital platforms like social media, storytelling, and artistic representations simplify and humanize abstract quantum concepts, aiming to resonate emotionally and intellectually with broad audiences. These approaches use accessible language and creative visualization to make quantum science approachable, fostering curiosity and reducing the distance set by complex ideas. On the other hand, interactive activities—such as workshops, public science events, exhibitions, and educational games—engage participants more deeply.

The National Quantum Science and Technology Institute (NQSTI) is deeply involved in outreach activities and will be organising special initiatives to celebrate the International Year of Quantum Science (IYQ). The ultimate goal is to promote awareness and understanding of quantum science among different audiences: schools, industry and the general public.

A critical component of awareness-raising activities is the evaluation of their effectiveness. Measuring engagement, knowledge transfer and public interest provides valuable insights into which methods are most effective. Obtaining this information will help NQSTI staff to establish a framework for long-term quantum literacy campaigns that will extend beyond IYQ and sustain public engagement as quantum technologies continue to advance.

References

[1] <https://quantum2025.org/>

[2] <https://worldquantumday.org/>

[3] <https://quantumweeks.it/>