WORLD ROBOT OLYMPIAD ™

Future Innovators

Season Challenge - 2026

Robots Meet Culture

AGE GROUPS ELEMENTARY, JUNIOR AND SENIOR

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CANADA VERSION BY ZONE01 ROBOTICS

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Robots Meet Culture

The WRO Future Innovators category is all about using your imagination and creativity to build robots that help make the world a better place. This category gives you the chance to use both your tech skills and your imagination. By solving real problems with your robot, you'll learn a lot—and you'll help make the world a more creative, fun, and connected place.

This year's theme is **Robots Meet Culture**. There are three areas within this theme:

- Area 1: Protecting, Preserving & Sharing Cultural Heritage
- Area 2: Co-Creation: Humans, Robots & AI
- Area 3: Experiencing Art and History with Robots

From ancient cave paintings to modern digital art, from fashion to architecture, people have always used creativity to tell stories, preserve traditions, and inspire change. Now it's your turn to explore how robots can help shape, protect, and grow art and culture in today's world.

Robots are no longer just machines used in factories—they are becoming creative partners and protectors of our cultural history. They can bring old art back to life, help create new and exciting forms of art and make cultural treasures easier to access for people everywhere. Robots can also help communities share their stories in new and powerful ways.

Your Robot's Mission:

In 2026, your Future Innovators team will design and build a robot that advances the world of art and culture. You will need to think about questions like: How can technology boost creativity and empower artists? How can robots help save and share history and culture? What new experiences or artworks can be discovered through robotics?

Pick a real problem - or dream up an amazing idea - within one of the three areas above. You might even combine areas. Talk with artists, conservators, historians, or your community to gather feedback and inspiration. Think about accessibility, inclusion, and how your technology serves real needs.

Once you've found a problem to solve, you need to design a robot that can help. This means thinking about what your robotic solution will look like, what it will do, and how it will work. Then you will build the robot model.

Once you're ready, share your idea and your robot with the world. Your presentation should highlight not only your engineering skills but also your creative process, impact, and respect for cultural authenticity.

Technical Requirements

Your robotic creation should be as close to a real-life robot in scale and performance as possible and should feature:

- **Multiple mechanisms, sensors, and actuators** controlled by one or more controllers.
- **Autonomous decision-making and real-time adaptation**, not just repeated workflows.

For specifics, make sure to review the general rules for this category (*specifically chapter 5*) and ensure your submission meets all requirements.

Robots Meet Culture

Area 1. Protecting & Preserving Cultural Heritage

Across the world, humanity's most precious treasures are at risk. Ancient manuscripts crumble in archives. Historic buildings suffer from pollution and climate change. Rare artefacts sit in storage, inaccessible to most people. Paintings fade, languages disappear, and sacred sites erode. Every day, pieces of our shared history are lost forever.

But robots can help. They can extend conservators' reach, work with precision, and handle fragile objects safely. Imagine robots that digitize manuscripts without touching them, drones mapping endangered sites in 3D, or robotic arms restoring pottery with microscopic accuracy.

Design robots that help protect, preserve, digitize, restore, or share cultural heritage, using careful, non-invasive methods and respecting the authenticity of historical artefacts. Work with experts and communities to safeguard our cultural treasures for the future.

Possible ideas for your robot:

Making Culture Accessible to Everyone:

Museums have millions of objects, but only a few are shown to the public. Archives store documents that most people never get to see. Many historic places are too fragile, far away, or expensive to visit. Some people can't travel because of distance, disabilities, or money. Your robot can help solve these problems by bringing museum experiences to people's homes, allowing virtual visits to hard-to-reach places, and creating fun, interactive experiences that anyone can enjoy.

Bringing History Back to Life:

Old photos are in black and white. Ancient buildings are often just ruins. Museum labels tell facts but can't show movement or explain the full story. Artefacts sit still in glass cases, and visitors wonder: What did this look like when it was new? How was it used? What was life really like? Your robot can help bring history to life by adding color, sound, movement, and context so people can better understand the past.

Restoring & Safely Handling Fragile Treasures:

Ancient manuscripts are too fragile to touch. Paint can fall off with even a small vibration. Archaeological pieces can break if they're moved the wrong way. Conservators spend long hours doing tiny, careful work that hurts their eyes and hands. Your robot can help by handling artefacts with extra-gentle care, working with microscopic precision, doing repetitive tasks without getting tired, and reaching small spaces that human hands can't.

Recording & Protecting Cultural Places:

Heritage sites face many dangers: pollution, acid rain, earthquakes, floods, heavy tourist traffic, and even damage from war or new construction. Some places are so remote or dangerous that it's hard for people to study them safely. Once a site is damaged, it can never be fully repaired, but good documentation can help protect knowledge and guide restoration. Your robot can enter risky areas, create detailed maps, watch for new threats, and even help protect sites during emergencies.

Area 2. Co-Creation: Humans, Robots & AI

Art is a unique human way to show emotion, tell stories, and connect with others. Artists use many techniques, and viewers can feel many emotions. But what if robots could join the creative process—not just as tools, but as real partners that learn, adapt, and surprise us?

Imagine a robot working with a painter, adding unexpected brushstrokes. Picture a robotic musician improvising alongside human players. Envision an AI-powered sculpture that changes with audience emotions. This is co-creation: humans and robots making art together that neither could create alone. Your robot can become part of human creativity, combining human intuition, culture, and emotion with the robot's precise movements, endless experimentation, and smart problem-solving.

Build robots that work with human artists, helping them explore new ideas and interactive experiences. The robot should be a true creative partner—thinking, responding, and creating alongside people—not just copying a style or following commands.

Possible ideas for your robot:

Co-Creation in Visual Arts, Music & Performance:

Artists, musicians, and performers spend years learning their craft. A robot should not replace their skill or creativity — but it can support them. Your robot can become a creative partner in real-time artmaking: painting alongside visual artists, improvising with musicians, or performing with dancers and actors.

Storytelling, Cultural Voices & Emotional Expression:

Stories carry cultural identity, preserve traditions, and give voice to marginalized communities. But many stories remain untold or inaccessible due to language barriers, distance, or the loss of cultural bearers: the people who used to tell them. Your robot can help communities tell their stories in powerful new ways; through movement, interactive experiences, and multi-sensory performances that mix traditional knowledge with modern technology.

Bridging Digital Creativity & Physical Reality:

Digital artists can imagine amazing visuals, complex patterns, and shapes that could never exist in real life, but these creations often stay on screens. What if your robot could bring digital art into the physical world? By combining AI, digital design tools, and robotic building or performance, you can turn virtual ideas into real experiences that people can see, touch, and share.

Human-Robot-AI Creative Collective:

What if you created an art group where humans, robots, and AI work together as equal partners? Not humans ordering robots, and not AI replacing artists, but a real team where everyone adds something special. Humans bring emotion, culture, and meaning. AI adds creative ideas, patterns, and endless experimentation. Robots give physical precision, consistent results, and movement. Together, you can make art or performances that make people rethink what creativity really is.

Area 3. Experiencing Art and History with Robots

Museums, galleries, and historic sites show us the past - but what if robots could help us feel it too? Static exhibits and screens give information, but they often miss the excitement of movement, touch, and presence. Imagine robots that bring cultural stories to life: ancient statues showing their original poses, recreated animals moving like they did long ago, or smart guides leading you through history with personality. Robots can turn watching into exploring. By adding motion, interaction, and presence, they help all visitors, including those with disabilities, connect emotionally and understand history better.

Design robots that enhance - but don't replace - the human experience with art and culture. They should help people understand more, feel curious, and enjoy memorable experiences, while keeping cultural objects and traditions authentic and safe.

Possible ideas for your robot:

Animated Artefacts:

Historic objects, tools, instruments, ceremonial items, architectural models, sit motionless in display cases. Visitors wonder: How did people use this? What did it sound like? How did it move? Your robot can answer these questions by physically demonstrating historical function and movement.

Multisensorial Storytelling:

Every visitor experiences museums differently. Some love reading detailed labels; others prefer audio guides; children need interactive engagement; people with visual or hearing impairments require alternative formats. A single static exhibit can't serve everyone. Your robot can adapt its storytelling to each visitor's needs, learning style, and cultural background, creating personalized, multisensory narratives that make heritage accessible to all.

Coordinated Robotic Experience:

What if an entire gallery or public space could come alive through synchronized robotics? Instead of one robot doing one task, imagine an orchestra of robots, each with a specialized role, working together to create an immersive, multisensory cultural narrative. Visitors step into a coordinated performance where motion, sound, light, projection, and physical interaction blend seamlessly into an unforgettable experience.

Other connections: The UN Sustainable Development Goals

The Future Innovators category invites you to help build the future. By tackling real-world challenges and designing imaginative robotic solutions, you'll develop valuable abilities and contribute to making a positive impact in communities and beyond.

We also encourage you to think about how your robot could help spread arts and culture. The United Nations has a list of 17 goals for a better world, like good education for everyone, equal chances for all, and protecting our communities, among many others. Maybe your robot can help with one of these goals too!

Check out the United Nations (UN) Sustainable Development Goals (SDGs):
https://www.un.org/sustainabledevelopment/sustainable-development-goals/

WRO Learn: the free platform to help you!

WRO Learn is our free global learning platform — a great entry-point to build your robotics skills. Whether you're a student starting your robotics journey or a teacher or coach looking for ready-to-use materials, WRO Learn gives you what you need.

Available courses for Future Innovators for coaches:

- How to coach a Future Innovators team

Courses for students:

- An introduction to robotics
- An introduction to the Future Innovators Category
- Explaining the topic of the year
- How to build your idea
- How to present your project

Courses for judges:

- How to judge in the Future Innovators Category

Register, dive into the courses and be more prepared than ever!

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