Train Students like WorldSkills Champions: Prepare Water Technicians for Modern Infrastructures



Skills competitions are strong career accelerators and valuable opportunities for teaching and learning, both at school and on the competition floor.

Skill 55 Water Technology is a growing discipline at WorldSkills competitions. Since its first introduction in 2013, competitors have demonstrated their expertise using learning systems such as EduKit PA and EDS Water Management.

Whether you take part in a competition or not, discover how the water technology occupational standard, practical tasks, and training equipment can inspire your teaching and support industry-relevant training for your students.

Develop Core Skills for Water and Wastewater Operations

The water management and industrial sectors need technicians who can monitor water quality, operate treatment plants, maintain infrastructure, and protect water resources. WorldSkills translates these needs through its Water Technology Occupational Standard, an industry-validated framework defining the professional skills and knowledge aspiring water technicians must develop.



The competition brings the occupational standard to life through concrete tasks that simulate municipal and industrial water and wastewater treatment plants, putting aspiring water technicians' skills to the test. Tasks are grouped into four main modules and typically include:

1 | Water and wastewater treatment processes
Competitors operate and monitor all treatment steps, identify risks, adjust process parameters, take corrective actions, document data, use energy efficiently, and apply sustainable operating practices while complying with health, safety, and environmental rules.

2 | Laboratory work, water quality analysis
Competitors take and preserve samples, perform chemical and biological analyses, document results, interpret water quality data, and use findings to identify problems and define corrective or preventive actions.

3 | Mechanical maintenance and repair
Competitors maintain and repair mechanical equipment, adjust and calibrate components, monitor process-relevant systems, apply preventive maintenance, identify cost drivers, respond to emergencies, and organize work safely and efficiently.

4 | Automation, measurement, and control
Competitors work with sensors, actuators, electrical systems, and control loops; read circuit and P&ID diagrams; take and interpret measurements; install and calibrate components; troubleshoot faults; communicate results clearly; and complete technical documentation.

Get inspired by the
→ **Water Technology Occupational Standard**

View a task project from a previous WorldSkills edition
→ **Download the PDF on Festo LX**

Explore Equipment for the Competition Floor and the Classroom

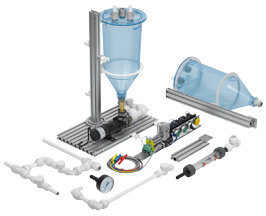
Competition tasks are performed on equipment aligned with WorldSkills requirements that simulates a basic water circuit, making it suitable for both competition preparation and process automation training. Explore the packages most relevant to water technology training:

EDS Wastewater Treatment Station



The wastewater treatment station simulates the physical processes of an activated-sludge treatment plant, including sedimentation and clarification, biological treatment processes, and sludge handling and return. It can be combined with other stations from the Environmental Discovery System (EDS) Water Management series.

EduKit PA and FluidLab-PA

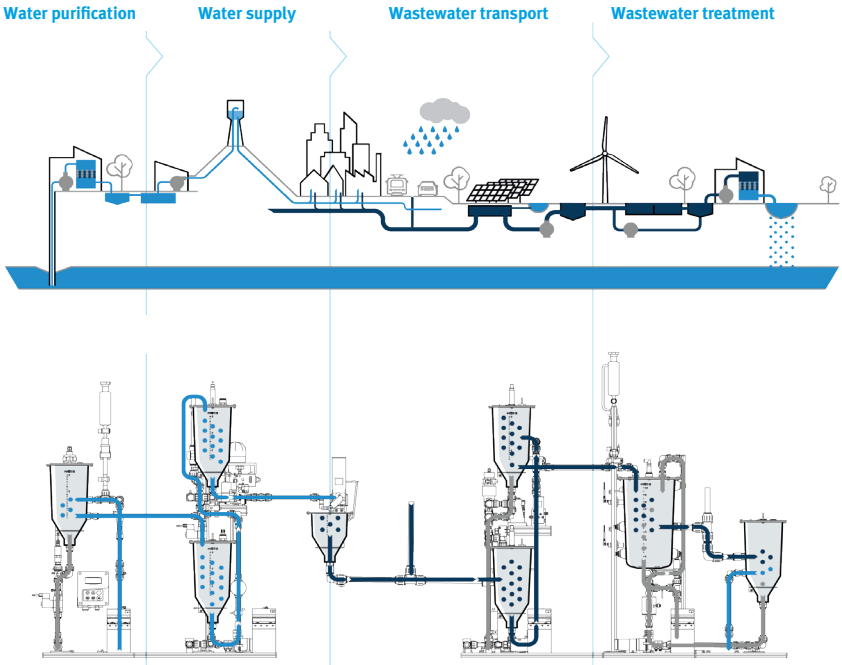


Using this simplified, industrial-grade process automation system, competitors monitor, control, diagnose, and optimize automated water-technology processes through sensors, actuators, and closed-loop control systems, complementing the mechanical and treatment tasks performed on the EDS stations.

EDS Water Pump Station



This laboratory-scale model of a real pumping station allows competitors to commission, operate, monitor, and maintain pumping systems, demonstrating skills such as flow and pressure control, handling industrial sensors and valves, fault troubleshooting, and energy optimization.



Equipment used during the competitions may be purchased at a special price after the event. Please contact your local Festo representative for information on availability and sales conditions.

Additional learning solutions from our portfolio support comprehensive water technician training, for example:

- Industrial maintenance for mechanical systems, electrical installations, and industrial pumps
- Pneumatic and electropneumatic systems
- Fundamentals of electrical technology
- Industrial control technology, including smart sensors with IO-Link, cybersecurity and network security, and PLC training
- Distributed control systems (DCS) for continuous process monitoring and control

Our experts work with you to identify and combine the learning solutions from our portfolio that best fit your training needs.

Ready to Move Forward?



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Whether your objective is to prepare students for WorldSkills competitions or to integrate competition-grade training into everyday teaching, we support you in building a learning environment aligned with your needs and educational aspirations.

Considering embarking on the WorldSkills journey with your students?
Here are the main steps to get started:

Step 1
Learn about the competition on your national WorldSkills website.

Step 2
Identify motivated and committed students to represent your institution.

Step 3
Register them for the regional skills competition, the first selection stage for higher levels, such as national and international competitions.

Step 4
Develop a training program based on the occupational standard and tasks from past competitions.

Step 5
Select training equipment suited to the required skills and learning objectives.

Contact your Festo local company.
Leverage expert guidance, practical advice, and technical insight from our specialists.

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