KingLead
World Technology League

世界科技高中认证通用标准

12 大前沿领域和产业：

1. 生物健康与医药产业
2. 数学前沿与大数据应用
3. 计算机与人工智能
4. 化学与新材料应用科技
5. 物理前沿与空间探索
6. 工程前沿与智能制造
7. 创新经济金融工程
8. 领导力与商业创新
9. 脑科学与积极心理学
10. 社会学前沿与社会创新
11. 文学理论与文创产业
12. 艺术创作与创意产业

维度 A：实验室建设

标准 A1. 实验室定位与目的：学校在高中教育背景下明确实验室的核心定位，使其成为支持学生学术研究与创新实践的关键载体。

标准 A2. 专业衔接与规划：学校实验室建设中的类型规划能够确保与高等教育所设专业实现有效衔接。

标准 A3. 外部资源引进与协同：学校通过引进外部学术资源突破硬件局限，建立高效的校内外学术协同机制。

标准 A4. 多元化场景设计：实验室空间设计以学生实际应用为导向，满足课堂教学、科研指导、学生研究、社团活动等多样化学术需求。

标准 A5. 安全合规与常态运营：学校拥有符合规范的实验环境以及安全合规体系，并配备专职人员负责实验室的常态化标准化运营以及学生安全培训。

维度 B：科研师资队伍

标准 B1. 胜任力模型与配置：根据科技高中师资胜任力模型，学校根据教学科研需求配置师资。

标准 B2. 顶尖人才引进与把控：学校拥有全球顶尖科学家及教授资源的引进机制，并让顶尖资源真正参与到学生指导和研究之中。

标准 B3. 内部师资能力建设：学校根据学生科研需求，分层配置校内科研师资，并持续提升教师在学生科研指导方面的理解力和专业能力。

维度 C：科研项目设置与课程融合

标准 C1. 前沿学科与产业覆盖：学校提供给学生的科研项目能够包含主要前沿学科及产业领域，确保研究课题的时代性与应用性。

标准 C2. 递进式科研体系：学校拥有从基础普及到拔尖培养的递进式科研体系，满足不同基础和不同学习目标的学生需求。

标准 C3. 课程体系化衔接：学校所提供的科研项目与学校主流课程深度融合与体系化衔接，让学生能够在几乎不增加额外学术负担的情况下参与科研项目。

标准 C4. 标准化项目管理：学校拥有学生科研项目实施全流程、全周期的标准化管理机制和负责人，保障科研项目的顺利开展。

维度 D：学生科研项目参与

标准 D1. 认知建设与预期管理：学校帮助学生和家长建立对学生参与科研项目目的、价值、成果和规律的正确认知，让学生获得和其水平和期望相符的科研参与体验。

标准 D2. 个性化参与路径：学校为不同基础和不同目标的学生提供不同难度、不同形

式的科研项目，让所有学生能够选择。

标准 D3. 学术规范与研究伦理：学校在科研项目实施中根据世界通行的学术规范与研究伦理来引导和培养学生，让学生产出的成果符合学术规范与研究伦理。

维度 E：学生成果产出与评价

标准 E1. 过程性评价机制：学校拥有针对科研项目参与的过程性评价体系，真实记录并反映学生在研究过程中的投入与成长。

标准 E2. 多元成果评价标准：学校对学生科研项目成果拥有多元化的评价标准，全面评估学生在不同维度的学术产出。

标准 E3. 真实学术画像构建：学校构建契合全球顶尖大学人才录取趋势的学术画像，客观呈现学生的学术竞争力。

标准 E4. 升学赋能与高教衔接：学校对学生的评价体系能够与高等教育的招生录取要求有效衔接，为学生升入适合大学赋能。

修订日期：2026 年 3 月 27 日

Universal Standards for World Science and Technology High Schools

12 Cutting-Edge Fields and Industries

1. Biohealth and Pharmaceutical Industry
2. Mathematical Frontiers and Big Data Applications
3. Computer Science and Artificial Intelligence
4. Chemistry and Advanced Materials Technology
5. Frontiers in Physics and Space Exploration
6. Frontiers in Engineering and Intelligent Manufacturing
7. Innovation in Economic and Financial Engineering
8. Leadership and Business Innovation
9. Brain Science and Positive Psychology
10. Frontiers in Sociology and Social Innovation
11. Literary Theory and Cultural and Creative Industries
12. Art and Creative Industries

Category A: Laboratory Development

Standard A1. Laboratory Purpose and Positioning: Within the context of high school education, the school defines a clear purpose for its laboratories, positioning them as key platforms for supporting student academic research and innovation.

Standard A2. Alignment with Higher Education: The school ensures that the types of laboratories it develops are aligned with relevant majors in higher education.

Standard A3. External Resource Integration and Collaboration: The school establishes effective collaboration mechanisms between internal and external academic communities by leveraging

external academic resources to overcome physical infrastructure constraints.

Standard A4. Design for Diverse Academic Uses: Laboratory spaces are designed to support a variety of academic activities—including classroom instruction, research mentorship, student-led inquiry, and club projects—based on student needs.

Standard A5. Safety Compliance and Sustainable Operations: The school maintains a compliant laboratory environment with a robust safety system, and employs dedicated staff to oversee the regular, standardized operation of laboratories and student safety training.

Category B: Research Faculty and Mentorship

Standard B1. Competency Model and Faculty Allocation: The school allocates faculty based on a defined competency model for science and technology high schools, aligning with teaching and research needs.

Standard B2. Engagement of Top-Tier Scholars: The school has mechanisms for engaging world-class scientists and professors, ensuring that such resources are meaningfully integrated into student mentorship and research.

Standard B3. Faculty Capacity Building: The school deploys internal research faculty in tiers according to student needs, and continuously enhances faculty competence in guiding student research.

Category C: Research Project Design and Curriculum Integration

Standard C1. Coverage of Cutting-Edge Fields and Industries: Research projects offered to students span major cutting-edge fields and industries, ensuring topics are timely and relevant to real-world applications.

Standard C2. Progressive Research Pathways: The school offers a tiered research system that ranges from foundational exposure to advanced development, accommodating students with diverse backgrounds and learning objectives.

Standard C3. Integration with Core Curriculum: Research projects are deeply integrated with the school's core curriculum, allowing students to engage without adding excessive academic burden.

Standard C4. Standardized Project Management: The school implements standardized management protocols and designates responsible personnel to oversee the full lifecycle of student research projects, ensuring quality implementation.

Category D: Student Engagement in Research Program

Standard D1. Expectations and Awareness Building: The school helps students and families

develop a realistic understanding of the purpose, value, and nature of research participation, ensuring student experiences align with their level and expectations.

Standard D2. Personalized Pathways for Participation: The school offers research opportunities of varying difficulty and format, allowing students of different levels and goals to choose pathways suited to their needs.

Standard D3. Academic Integrity and Research Ethics: The school guides students in accordance with internationally accepted academic norms and research ethics, ensuring student work meets these standards.

Category E: Student Outcomes and Evaluation

Standard E1. Formative Assessment: The school has a formative assessment system that authentically documents and reflects students' engagement and growth throughout the research process.

Standard E2. Diverse Evaluation Criteria: The school adopts multiple criteria for evaluating student research outcomes, assessing academic output across various dimensions.

Standard E3. Authentic Academic Profile Building: The school supports students in building authentic academic profiles aligned with the admissions expectations of top global universities, objectively presenting their academic strengths.

Standard E4. College Preparation and Higher Education Alignment: The school’ s evaluation system is designed to align with higher education admissions requirements, supporting students in their transition to appropriate universities.

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