Chariho Regional School District

Technology Education Curriculum

Grades K-8

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Technology Education Task Force Membership

Kristen Anderson
Michael Comella
Michelle Conary Brittain
Kate Ficarra
Sherri Jackson
Diane Kissinger
Bryan Lucas
Jeffrey Scanapieco
Susie Scanapieco
Alison Ward

Epistemological Foundations

The Chariho Regional School District believes that students learn best when they are actively engaged in and personally responsible for the learning process. Students need a safe and positive environment in which to talk purposefully about learning, to experience learning, and to observe learning. Learning is enhanced when students have an interest in and choice about what they learn. Students should be engaged in meaningful learning experiences that match their developmental status.

New learning builds on previous knowledge through a process that is challenging and rigorous. That process must encourage students to problem-solve and to think originally, critically, and creatively. Thinking and problem-solving are closely linked to a demanding core of content knowledge. Learning is most quickly assimilated when connected to student goals, when students evaluate their own work and learning habits, and when instruction appeals to a variety of learning modalities and talents.

In an environment of high expectations, sustained and directed student effort and expert teaching practices determine the extent of learning. Our schools and District will organize to encourage and support both.

Introduction

The Chariho Regional School District will ensure the use of technology as a tool in the educational process to improve student achievement as evidenced by reaching state and national standards. All students will be provided with the opportunity to acquire the knowledge and skills necessary to realize their potential, and to become productive citizens. Students will be provided routine access to technology as detailed in the Chariho District Technology Plan.

We live in the Information Age. This age and the culture in which we live are increasingly being supported and changed by a wide variety of technologies. Technology is rapidly developing and changing. Chariho is responsible for preparing its students to be productive, contributing members of our society. This is done through effective, efficient, and meaningful instruction. In this regard, Chariho will continue to lead statewide efforts in implementing computer science instruction. This program was established by the Governor's office in 2016 and is referred to as CS4RI or Computer Science for Rhode Island. The objectives of this program are to create a computer science curriculum that spans grades K-12 and to ensure that our graduates are equipped with the skills necessary to create and sustain technology based industries in the state of Rhode Island. Accordingly, this curriculum plan is put forward with the knowledge that innovation and change will likely occur throughout this timeframe, and that this change will require close coordination with all stakeholders.

We are preparing our students to live and work in the 21st century economy where the workplace and the home are technologically oriented. This new environment will demand workers and parents who can use higher order thinking skills. Jobs and community participation will require educated citizens who can solve problems, understand complex terminology, communicate clearly, and make sense out of rapidly changing information

To this end, we in the Chariho Regional School District believe that technology exists as a very powerful and essential tool in the education process for both students and staff. Technology should be part of every curriculum at every level of instruction. "All technologies, at every level, explored by everyone" is a broad way to state the impact and importance of this fact of life.

Since technology empowers students to improve achievement, technology needs to be incorporated into the regular classroom curriculum as a seamless component of the delivery of instruction. Technology should not be treated as a stand-alone or "extra" subject, but incorporated into all students' academic lives as it is in the wider world of work, personal interests and recreation. Assessments will rely heavily on authentic project-based.

The Chariho Regional School District will provide computers and Internet capabilities to each classroom kindergarten through grade 12, as detailed in the Chariho District Technology Plan. Students in grades five through eight will attend computer literacy classes focused on keyboard instruction, introduction, reinforcement and mastery of essential computer software, principles and applications of computer science, along with Internet safety.

Every student will understand social, ethical and legal implications of using computer technology. Furthermore, students will be able to effectively use, and in some cases, create digital resources. Students will realize the power given by technology to communicate and collaborate with others, collect information, and create new knowledge. Students will routinely use productivity, communication and research tools to understand concepts, produce original work, present ideas, solve problems and make decisions based on real life situations and issues.

District Mission

The Chariho Regional School District ensures that all students meet high academic standards and are prepared for lifelong learning and productive global citizenship.

District Vision

With a commitment to continuous improvement, the District's highly-qualified staff engages with students in state-of-the-art facilities to master challenging content, to promote creativity, and to foster critical thinking. The District is recognized by the community as its greatest asset.

District Beliefs

We believe that high academic standards and research informed decision making are critical…

- Rigorous academic standards and high expectations, along with a robust and responsive system of supports, are the foundation of the school district.
- All professionals operate from a belief that all students can learn at high levels and meet or exceed demanding standards.
- All students at every level must be engaged in challenging academic experiences.
- Instructional and program decisions must be data-informed and evidence-based.
- Learning is a continuous lifelong process.
- Schools must prepare students to be creative and critical thinkers, problem solvers, and effective communicators.
- The physical, social, and emotional wellness of every child is necessary for optimum learning along with a robust support system.

We believe that the larger community must be fully engaged in the learning process…

- Education is a shared responsibility of students, parents, staff, and the community.
- Students thrive when supported, nurtured, and engaged by the community.
- In an environment that emphasizes school safety, everyone must be treated with kindness, dignity, and respect.
- Customer service must be a priority.
- Schools must prepare students to be team members and leaders, civic-minded, community contributors, and productive citizens of a global society.

Lists of Technology Curriculum Documents

Grades K-8 Technology Grade Span Curriculum Documents

(Click on each grade level below to view the Grade Level curriculum)

K-2 Curriculum

3-5 Curriculum

6-8 Curriculum

Implementation of Curriculum

In Grades K-4, the Library Media Specialists will implement most of the standards listed in this curriculum. In Grades 5-8, Technology Teachers will implement most of the standards listed in this curriculum.

National Educational Technology Standards for Teachers © 2010 Hawker Brownlow Education • IST3926

Rhode Island K-12 Computer Science Education Standards

Guiding Principles:	
The following Guiding Principles helped establish our aspirational vision and informed the development of K-12 Computer Science education standards for Rhode Island.	
Broaden Participation & Equity	All students regardless of age, race, ethnicity, gender, socioeconomic status, special needs, English proficiency, or any other demographic will have the opportunity to participate in computer science.The content and practices of the standards will be accessible to all.
Stimulate Learning & Curiosity	The standards at all grade levels will connect to appropriate real world challenges as a means to motivate and empower, promote individual growth, and spark a desire for life-long learning.
Build Connections Across Disciplines	Computer science will complement other disciplines and build upon and develop student knowledge.,The standards will connect with practices and concepts from the Common Core State Standards (CCSS) and the Next Generation Science Standards (NGSS) to promote learning across disciplines.
Encourage Workforce/Economic Development	Students will have the skills, practices, and knowledge to participate in a world that is increasingly influenced and shaped by technological advancements.,The standards will help to prepare students who can adapt and prosper under constantly changing conditions.
Support Teachers	The standards will identify focused learning progressions and multi-tier teaching approaches that meet the needs of all learners.
Inform with Current Research	The standards will be based on current professional research and practice in computer science education and pedagogy.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Rhode Island K-12 Computer Science Education Standards

Equity in Computer Science Education

The Rhode Island Computer Science Education Standards Advisory Committee believes that equity and broadening participation must be at the forefront of the computer science initiative to ensure that all Rhode lsland students benefit. We strongly agree with the position identified in the K-12 Computer Science Framework (2016) which states: When equity exists, there are appropriate supports based on individual students' needs so that all have the opportunity to achieve similar levels of success. Inherent in this goal is a comprehensive expectation of academic success that is accessible by and applies to every student. . . . equity, inclusion, and diversity are critical factors in all aspects of computer science.(pp.23, 26)1 We constantly returned to this issue throughout the development of the standards. We worked to ensure equity is embedded in the standards themselves, the descriptions, and the accompanying suggested activities. Additionally, standards can be met without computing devices or with a limited amount of available hardware so implementation is possible for all schools.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Computational Thinking

Computational thinking involves solving problems, designing systems, and understanding human behavior, by drawing on the concepts fundamental to computer science. . . . This kind of thinking will be part of the skill set of, not only other scientists, but of everyone else. Ubiquitous computing is to today as computational thinking is to tomorrow. Ubiquitous computing was yesterday's dream that become today's reality; computational thinking is tomorrow's reality. – Jeannette Wing, March 2006 Communications of the ACM, 49(3), 33-35.

Computational thinking is central to the standards and a necessary skill for participation in today's society. It can

be applied broadly to solving complex problems in other disciplines and can be taught across the K-12 curriculum.1

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Standards

Standards represent pathways that are realistic expectations for all students. They identify the knowledge, practices, and skills in computer science that all students should know and be able to do at each level in their education. They serve as specific performance measures and are used as reference points for planning and teaching, including but not limited to, the development of curriculum frameworks, curricula, lesson plans, instruction, professional development, and assessment. The standards are written to be aspirational – they represent the concepts and practices that all students need to master. They are designed to inform, encourage, and drive a sustainable computer science education program, and were developed to be cognitively appropriate for each grade band. Careful attention was paid to word choice in the standards to ensure measurability.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Grade Bands

The decision to adopt and use the grade bands identified in the CSTA K-12 Standards document – K-2, 3-5, 6-8, 9-12 – allows for increased flexibility for implementation in schools. Although the CSTA separated grades 9-12 into two levels – 9-10, 11-12 – with the 11-12 level designed for students enrolled in more rigorous courses, we decided that it was appropriate to extend the 9-10 level to 9-12 at this time since our goal focused on standards for ALL students.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

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