

Example of curriculum for the school year

Week	Objective(s)	Activities	Science Standards addressed	AZ Technology Standards
1	SWBAT identify their strength or weakness in public speaking and team work	-Presentations (Day 1) -Ice Breakers (Day 2) -Reflection (Day 2) -Team Building		
2	SWBAT to identify Creativity & Imagination as engineering tools	-Intro to FLL program -Liter of light video -Reflection		
	SWBAT define, explain, and differentiate Science and Engineering	-Paper football lab- Scientific Method use (Science) -Design of the "best" paper football (Engineering)	S1C1-01/02 Formulate questions based on observations that lead to the development of a hypothesis	S1C1-01 Analyze and evaluate information to generate new ideas, processes or products
3	SWBAT identify an essential question to address a real world problem (FLL challenge)	-Internet research of world problem proposed by FLL; project set up -Essential question write up	S1C1-01/02 Formulate questions based on observations that lead to the development of a hypothesis S1C1-03. Locate research information, not limited to a single source, for use in the design of a controlled investigation S1C1-02. Select appropriate resources for background information related to a question, for use in the design of a controlled investigation S1C1-02. Use appropriate research information, not limited to a single source, to use in the development of a testable hypothesis	S1C3-01 Identify patterns and trends to forecast possibilities from different perspectives. S1C3-02 Ask questions and investigate a problem from different perspectives and formulate inferences from known facts. S3C1-01 Predict the most effective keywords and phrases for use in information searches S3C1-02 Determine which information source will provide the desired data S3C2-01 Locate and synthesize information utilizing advanced search strategies S4C1-01 Write essential questions to investigate a topic or issue using digital tools and

				resources
4-5	SWBAT propose possible solutions for the real world problem	-Further internet research -FLL Videos: "Kids teaching kids"	S1C1-03. Generate a hypothesis that can be tested. S1C2-05. Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs. S3C2-01. Propose viable methods of responding to an identified need or problem.	S1C3-01 Identify patterns and trends to forecast possibilities from different perspectives. S1C3-02 Ask questions and investigate a problem from different perspectives and formulate inferences from known facts. S3C2-02 Use authoritative primary and/or secondary sources S3C2-03 Evaluate between fact and opinion, bias, inaccurate and misleading information by consulting multiple sources
	SWBAT design and present a rough draft of their proposed solution	-Use of laptop computers to access needed resources -Free design of solution draft	S3C2-01. Propose viable methods of responding to an identified need or problem.	S1C4-01 Create innovative products or projects using digital tools to express original ideas S1C4-02 Use digital tools to synthesize information, produce original works, and express ideas S3C2-04 Synthesize research information to create new understanding or develop new ideas

4-7	SWBAT present a final draft of a possible solution	-Use of laptop computers to access resources -Class presentations -Draft Solution Revisions	S3C2-01 Propose viable methods of responding to an identified need or problem S3C2-02 Compare solutions to best address an identified need or problem	S2C1-01 Collaborate and communicate with peers, experts, or others employing a variety of digital tools to share findings and/or publish
5-6	SWBAT to perform simple programmed tasks with EV3	-Intro to EV3 and basic attachments -Complete simple tasks	S1C2-01 Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry	S6C1-01 Explain and correctly use terms related to networks and connectivity S6C1-02 Define and apply knowledge of various technical process terms.
8-9	SWBAT plan a strategy to run missions effectively	-Presentation of Field Set Up Kit -Mission assembly -Mission strategy planning	S1C2-04 Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers)	S4C2-02 Present defensible solutions and make decisions from multiple perspectives using collected resources and data.
8-10	SWBAT construct or build their proposed solution to the challenge	-Building, construction, or any necessary action to materialize the proposed solution to the challenge	S3C2-03 Design and construct a solution to an identified need or problem using simple classroom materials	S2C1-02 Explain and demonstrate features, conventions, voice, and etiquette of interactive digital environments to communicate with an appropriate audience.
	SWBAT test, adjust, and revise their inventions	-Testing: show to the class how your invention addresses the challenge -Revise: make any necessary adjustments or changes necessary to maximize productivity	S3C2-02 Compare solutions to best address an identified need or problem	S2C2-01 Communicate and collaborate for the purpose of producing original works or solving problems.
10-12	SWBAT build and program a robot that successfully completes the planned missions	-Programming: videos, manual, small group instruction, inquiry based	S1C3-02 Form a logical arguments about a correlation between variables or sequence of events (e.g., construct a cause-and-effect chain that explains a sequence of events.)	S6C2-03 Enter/edit data using simple formulas while using spreadsheet(s) to perform calculations S6C2-04 Define terms used in database creation and perform simple operations

11	SWBAT understand and explain the Core Values	-Reading and Interpreting Core Values -Prepare a skit demonstrating understanding of the Core Values		S2C2-01 Communicate and collaborate for the purpose of producing original works or solving problems
12	SWBAT demonstrate full understanding of Core Values	-Present a skit that models all Core Values		S2C2-01 Communicate and collaborate for the purpose of producing original works or solving problems
13-15	SWBAT perform Core Values and Challenge presentations as well as run missions according to plan	Rehearsals: Core Values and Challenge Practice: missions; friendly competition between groups	S1C4-03 Communicate the results of an investigation with appropriate use of qualitative and quantitative information S1C4-05 Communicate the results and conclusion of the investigation	S6C3-01 Generate and apply solutions to troubleshoot hardware and software issues and problems
After Competition	SWBAT analyze group performance and generate self constructive criticism	Rubric Review: students will analyze their personal rubrics from the competition judges	S2C1-03 Analyze the impact of a major scientific development occurring within the past decade S2C1-04 Analyze the use of technology in science-related careers	S1C3-01 Identify patterns and trends to forecast possibilities from different perspectives
After Competition	SWBAT revise, adjust, and optimize programming and missions	Based on rubric review, identify weaknesses and improve robot performance	S2C2-01 Describe how science is an ongoing process that changes in response to new information and discoveries	S1C3-01 Identify patterns and trends to forecast possibilities from different perspectives
After Competition	SWBAT self reflect on their growth	Students will be asked to perform during school activities such as Science Night Students will be in charge of preparing and presenting what they've learned in Robotics	S1C3-04 Formulate future investigations based on the data collected	S2C1-01 Collaborate and communicate with peers, experts, or others employing a variety of digital tools to share findings and/or publish

Some connections to ELA and Math (Arizona College and Career Ready Standards):

RST.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tests.

RST.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

RST.7 integrate quantitative or technical information expressed visually (e.g., in a flow chart, diagram, model, graph, or table).

RST.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

RST.9 Compare and contrast the information gained from experiments, simulations, videos, or multimedia sources with that gained from reading a text on the same topic.

WHST.1 Write arguments focused on discipline-specific content.

WHST.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

WHST.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

WHST.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline- specific tasks, purposes, and audiences.

SL.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on other's ideas and expressing their own clearly.

SL.2 Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, and orally) and explain how the ideas clarify a topic, text, or issue under study.

SL.5 Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.

EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.