

Project-based Learning at SK: Two Year Overview at Grades 5-6								
	Year 1				Year 2			
	Project #1 Native Species in Michigan	Project #2 World-changing ideas	Project #3 World War II and young people	Project #4 Nutrition and our bodies	Project #1 Ancient and Medieval Empires	Project #2 The Human Brain	Project #3 Humans and Gods	Project #4 The Solar System and Our Place in It
Challenging Problem or Question	How can scientists study and citizens enjoy our native Michigan species?	How can an idea change the world?	How did WWII affect kids around the world?	How do our nutritional choices affect our body systems?	What was life like in ancient and medieval empires in Africa, Asia, and South America?	Who am I and what does my brain have to do with it?	Why do humans worship gods?	What is our place in the universe?
Project Description/Summary	In two integrated parts, students study native Michigan species. First, they design experiments to answer questions about a local organism (such as the pill bug) that they collect. Then they research local fish and design an aquarium to mimic its natural habitat while also creating posters about Michigan's outdoor recreation economy. Related books include HOOT, an environmental mystery, and A LONG WALK TO WATER, a story about refugees, humanity, and water.	Students discover trends, events, and people who exemplify historical time periods between 400 and 2000 CE (such as the Golden Age of Islam, European Renaissance, and Scientific Revolution), focusing mostly in Europe and the Middle East. Then they complete an in-depth research study of one idea, and prepare to discuss how they changed the world and how the world changed them. Students assemble costumes and create a model, poster, or prop. Related reading includes a class performance of the medieval historical fiction GOOD MASTERS! SWEET LADIES!	Students read THE WAR THAT SAVED MY LIFE as a class and then choose a separate WW2 novel to read individually. They choose a population affected by the war (Jewish children in concentration camp, English children sent to the country, German children in Hitler Youth, Japanese-American children in an internment camp, etc.) and research the lives and circumstances of that community during the war. Students will follow the 5-6 Path to Publication plan, creating characters and outlining a plot that illustrates an understanding of the time and place. Students will publish stories and display artwork of the settings.	As a class, students discover and explore the function and needs of different organs and systems of the body. They study human anatomy and physiology. They also study nutrition and food science. Students collect and invent healthy kid-friendly recipes. They design and publish a cookbook containing scientific information about how each recipe nutritionally supports the body with illustrations explaining how the body systems themselves work.	Students learn about ancient and medieval kingdoms in Africa, South America, China, and Japan. Each student creates a sugar-cube model of a building important to that civilization and a poster demonstrating the economy, government, religion, or social structure. The final deliverable in this project must convey both daily life in this society as well as an important event, and students propose a method to do this such as skit, video, story, or other format.	Through dissections, other experiments, role-play, and research, students learn how their brain works to control their bodies, studying neurons and electricity, parts of the brain, left-brain versus right-brain dominance, and how diseases and other injuries (Phineas Gage!) affect the brain. Once they understand the human brain, we turn to Artificial Intelligence, what that is and how it mimics our own brains.	Students explore the evolution of religions from ancient to modern times, look at the relationships and similarities and differences between religions, and research a religion of their choice. Students also write a persuasive essay with thesis and supporting statements about the role of modern religion in society today.	Students study the history, movement, and composition of the earth, moon, and sun, the planets, and other aspects of our solar system, and the stars and the universe. We will also examine the human desire to explore the universe and ways we have done so so far. Deliverables will include charts and posters, a whole-class modeling project, and as a well-researched and edited informational essay.

Project-based Learning at SK: Two Year Overview at Grades 7-8								
	Year 1				Year 2			
	Project #1 Michigan Student Caucus	Project #2 Arduino Robotics and the Engineering Design Process	Project #3 Detroit as Primary Source	Project #4 Alternative Energy	Project #1 Money Matters	Project #2 The Chemistry of Cooking	Project #3 Why Shakespeare?	Project #4 War, what IS it good for?
Challenging Problem or Question	What are the most important issues facing young people and students of all ages, today and in the future and what can we do about them?	How can we use the engineering design process to modify existing technology for a specific purpose?	How do we learn about a place? How do we conduct effective research that engages multiple perspectives in order to deepen our understanding of a place?	How can "green" energy sources be employed to better serve the needs of various communities?	What is "financial literacy" and how can young people learn to manage money for the future	How can we use chemistry to produce more appetizing food? How can we use chemistry to produce more appetizing food? How are concepts like fermentation, acidity, solubility applied in food production?	How can we join the next generation of students to be challenged and stirred by the Bard?	How did the major conflicts of the 20th century push the development of advanced science and engineering, and at what cost?
Project Description/Summary	Students will participate in the Michigan Student Caucus, an online platform that affords participants a chance to engage in dialog on issues of importance to young people in Michigan. Through online discussion, participants will write and rank the top proposals and select the best ones to become part of the Michigan Student Caucus platform.	Using their understanding of physics, students will research about and then build an autonomous robot from a kit and then propose and design modifications to the kit to solve an assigned problem related to the use of autonomous vehicles.	After learning research protocols, students will apply their skills to a topic area of their choosing related to the study of the city of Detroit. Through primary and secondary source research in books and online and original research done during frequent trips to Detroit, students will create a presentation to share with peers, parents, and community members about a particular aspect of the city's history, present, or future.	Students will create proposals for employing solar power at SK. They will also learn about how modern methods of power generation can be used to support historically underserved communities. To motivate the project, students will read The Boy Who Harnessed the Wind and discuss the role energy plays in developing nations.	Students will develop financial literacy skills through multiple curricular lenses in order to understand how financial systems work; learn about key social, political, and historical financial events and related legislation; and practice making personal financial decisions.	Students will learn about these concepts and then develop and/or improve upon recipes in preparation for a pop-up restaurant night fundraiser.	Students will delve into deep text study in order to learn how to read Shakespeare, understand the relevance and brilliance of Shakespeare, and perform Shakespeare. This unit of study will culminate in a performance of one of Shakespeare's plays.	Students will explore technological advances in warfare that later had civilian applications. Students will select a wartime technological advance and learn the history of its application during and after the war. This may include building and testing gliders, rockets, blimps, submarines; testing chemical effects on soil; and debating the ethics of using research collected unethically.