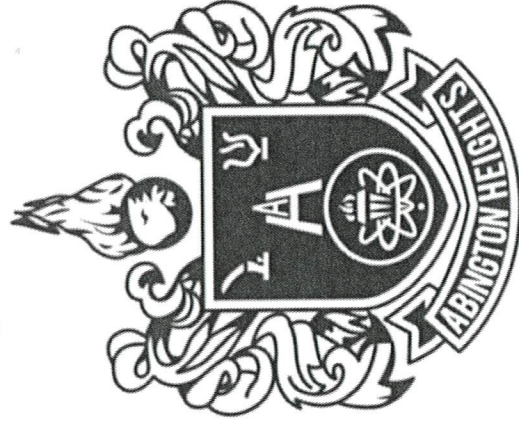


Abington Heights School District Comet Connects Kindergarten - Grade 2 Science, Technology & Engineering, and Environmental Literacy & Sustainability Curriculum



Themes:

- ★ Engineering
- ★ Technology

Board Approval Date: April 3, 2024

Review Date:

Adoption: 2024 - 2025 SY

Kindergarten Comet Connects Curriculum Scope and Sequence

Month	Unit	Estimated Number of Weeks
September	ENGINEERING: What is the engineering design process?	2 Weeks
October	TECHNOLOGY: How does technology make tasks easier to complete?	2 Weeks
November	ENGINEERING: What are challenges when implementing the engineer design process?	2 Weeks
December	TECHNOLOGY: How can you make a character move in a program? TECHNOLOGY: What are some internet safety practices you can use?	2 Weeks
January	ENGINEERING: What are challenges when implementing the engineer design process?	2 Weeks
February	TECHNOLOGY: How do robotics use block coding?	2 Weeks
March	TECHNOLOGY: How do robotics use block coding?	2 Weeks
April	ENGINEERING: What are the challenges when implementing the engineering design process?	2 Weeks
May	TECHNOLOGY: How are robots able to move?	2 Weeks
June	REVIEW: Students will review coding and engineering skills taught throughout the year.	2 Weeks

Grade 1 Comet Connects Curriculum Scope and Sequence

Month	Unit	Estimated Number of Weeks
September	ENGINEERING: What is the engineering design process?	2 Weeks
October	TECHNOLOGY: How does technology make tasks easier to complete?	2 Weeks
November	ENGINEERING: What are challenges when implementing the engineer design process?	2 Weeks
December	TECHNOLOGY: How can you make a character move in a program? TECHNOLOGY: What are some internet safety practices you can use?	2 Weeks
January	ENGINEERING: What are challenges when implementing the engineer design process?	2 Weeks
February	TECHNOLOGY: How do robotics use block coding?	2 Weeks
March	TECHNOLOGY: How do robotics use block coding?	2 Weeks
April	ENGINEERING: What are the challenges when implementing the engineering design process?	2 Weeks
May	TECHNOLOGY: How are robots able to move?	2 Weeks
June	REVIEW: Students will review coding and engineering skills taught throughout the year.	2 Weeks

Grade 2 Comet Connects Curriculum Scope and Sequence

Month	Unit	Estimated Number of Weeks
September	ENGINEERING: What is the engineering design process?	2 Weeks
October	TECHNOLOGY: How does technology make tasks easier to complete?	2 Weeks
November	ENGINEERING: What are challenges when implementing the engineer design process?	2 Weeks
December	TECHNOLOGY: How can you make a character move in a program? TECHNOLOGY: What are some internet safety practices you can use?	2 Weeks
January	ENGINEERING: What are challenges when implementing the engineer design process?	2 Weeks
February	TECHNOLOGY: How do robotics use block coding?	2 Weeks
March	TECHNOLOGY: How do robotics use block coding?	2 Weeks
April	ENGINEERING: What are the challenges when implementing the engineering design process?	2 Weeks
May	TECHNOLOGY: How are robots able to move?	2 Weeks
June	REVIEW: Students will review coding and engineering skills taught throughout the year.	2 Weeks

AHSD Science Comet Connects (STEM) Curriculum Kindergarten - Grade 2		Standards	Content	Skills	Activities	Assessment / Evidence of Learning
Month / Unit	Essential Questions					
September	BACKGROUND INFORMATION: How do natural resources affect technologies we use everyday?	<p>3.5.K-2.BB Compare the natural world and human-made world.</p> <p>3.5.K-2.AA Demonstrate that creating can be done by anyone</p> <p>3.5.K-2.JI Compare simple technologies to evaluate their impacts.</p> <p>3.5.K-2.I Compare simple technologies to evaluate their impacts.</p> <p>3.5.K-2.B Describe qualities of everyday products.</p> <p>3.5.K-2.H Explain the needs and wants of individuals and societies</p> <p>3.5.K-2.L Explore how technologies are developed to meet individual and societal needs and wants</p> <p>3.5.K-2.U Explain that design is a response to wants and needs</p> <p>3.5.K-2.M Demonstrate essential skills of the engineering design process.</p> <p>3.5.K-2.P Discuss that all designs have different characteristics that can be described.</p> <p>3.5.K-2.F Demonstrate that designs have requirements</p> <p>3.5.K-2.J Design new technologies that could improve their daily lives.</p> <p>3.5.K-2.CC Discuss the roles of scientists, engineers, technologists, and others who work with technology.</p> <p>3.5.K-2.Y Discuss how the way people live and work has changed throughout history because of technology.</p>	<p>Humans use natural resources for everything they do. They then turn the natural resources into materials that then improve their daily. The tools that they create can vary in their complexity.</p> <p>Engineers follow a process (think, plan, create, test, improve) when creating something new.</p>	<p>Students will be able to identify natural resources and how they are used for human made resources.</p>	<p>Kindergarten- 2nd Grade: Compare natural resources and human made resources.</p> <p>Identify how natural resources and human made resources are used in different technologies.</p>	<p>Kindergarten- 2nd Grade: Natural vs. Human Made activity- Identify different materials and how they are used in technology.</p>
October	TECHNOLOGY: How does technology make tasks easier to complete?	<p>3.5.K-2.G Explain the tools and techniques that people use to help them do things.</p> <p>3.5.K-2.F Investigate the use of technologies in the home and community.</p> <p>3.5.K-2.C Explain ways that technology helps with everyday tasks.</p>	<p>Coding is directions that tell the computer to do. The basis of coding is block coding. Block coding uses directional arrows that tell the character which direction to move.</p>	<p>Students will be able to label and use different parts of the tablet. Students will be able to complete simple coding directions in a variety of ways (unplugged coding sheets, hopscotch coding, Scratch and Scratch Jr, challenges.</p>	<p>Kindergarten: Label parts of tablet and review how it is used and practice with CodeKarts coding app.</p> <p>1st and 2nd Grade: Unplugged coding and Scratch Jr, challenges.</p>	<p>Kindergarten- 2nd Grade: Design and create their own tool to solve a variety of problems.</p> <p>First Grade: Plan or create your own school.</p> <p>Second Grade: Create your own tool to solve a household chore.</p>
November	ENGINEERING: What are challenges when implementing the engineer design process?	<p>3.5.K-2.O Illustrate that there are different solutions to a design and that none are perfect.</p> <p>3.5.K-2.X Develop a plan in order to complete a task.</p> <p>3.5.K-2.DD Collaborate effectively as a member of a team.</p> <p>3.5.K-2.O Illustrate that there are different solutions to a design and that none are perfect.</p>	<p>Engineers identify a problem and then create a tool to help them solve the problem. Engineers follow the design process to create their tool. Many engineers work together as a team to create their projects.</p>	<p>Students will plan, design, create, and test two different challenges. Students will work together as a team.</p>	<p>Kindergarten: Fall STEM bin challenges and Turkey Hideout Challenge</p> <p>1st Grade: Mayflower Voyage and Turkey Trap</p> <p>2nd Grade: Pumpkin Stand and Thanksgiving Table</p>	<p>Kindergarten- 2nd Grade: Variety of engineering challenges, demonstrating understanding of the engineer process</p>
December	TECHNOLOGY: How can you make a character move in a program?	<p>3.5.K-2.Z Illustrate how systems have parts or components that can you make a character work together to accomplish a goal.</p>	<p>Coding is directions that tell the computer to do. The basis of coding is block coding. Block coding uses directional arrows that tell the character which direction to move.</p>	<p>Students will use block coding to solve problems in different coding apps.</p>	<p>Kindergarten: Introduce Scratch Jr</p> <p>1st Grade: Robocode Coding Hour</p> <p>2nd Grade: Sphero Indi Robotics</p>	<p>Kindergarten- 2nd Grade: Work on a variety of coding apps and robotics</p>
	TECHNOLOGY: What are some internet safety practices you can use?	<p>3.5.K-2.E Illustrate helpful and harmful effects of technology.</p>	<p>Technology has many helpful, but also harmful uses. It is important to listen to your own feelings when using technology.</p>	<p>Students will review different scenarios relating to technology usage. Students will identify their feelings or emotions within the scenario and their actions/next steps with technology usage.</p>	<p>First Grade: Create a picture that shows how students would handle uncomfortable online situations.</p>	<p>1st Grade: Commonsense.org internet safety activity</p>

AHSD Science Comet Connects (STEM) Curriculum Kindergarten - Grade 2

Month / Unit	Essential Questions	Standards	Content	Skills	Activities	Assessment / Evidence of Learning
January	<p>ENGINEERING: What are challenges when implementing the engineer design process?</p> <p>3.5.K-2.N. Analyze how things work. 3.5.K-2.Q. Apply design concepts, principles, and processes through play and exploration. 3.5.K-2.D. Select ways to reduce, reuse, and recycle resources in daily life. 3.5.K-2.K. Safely use tools to complete tasks.</p>	3.5.K-2.E. Illustrate helpful and harmful effects of technology.	Engineers identify a problem and then create a tool to help them solve the problem. Engineers follow the design process to create their tool. Many engineers work together as a team to create their projects.	Students will plan, design, create, and test two different challenges. Students will work together as a team.	<p>Kindergarten: Building a snowman with playdough and creating a shelter for winter animals. 1st Grade: Fairy tale challenge and make your own sledding ramp 2nd Grade: Making a boat</p>	<p>Kindergarten-2nd Grade: Engineering Challenge activities</p>
February	<p>TECHNOLOGY: Which symbols on the keyboard are important?</p> <p>TECHNOLOGY: How do robotics use block coding?</p> <p>3.5.K-2.S. Apply design concepts, principles, and process through play and exploration.</p>	3.5.K-2.E. Illustrate helpful and harmful effects of technology.	Technology has many helpful, but also harmful uses. It is important to listen to your own feelings when using Robots and their accompanying programs may use a variety of coding languages to program the robot to move. The dashbot, sphero indi, and photon use block coding to make the robotics move.	Students will review different scenarios relating to technology usage. Students will identify their feelings or emotions Students will identify how technology enhances the human experience. Students will create a storyboard and then create a scene using PBS Kids Scratch Jr.	<p>2nd Grade: Internet Safety</p> <p>Kindergarten: Review different technologies and who needs them and why. Continue coding with Scratch Jr. 1st Grade: Discuss how technology makes a positive impact. Work with PBS Kids Scratch Jr 2nd Grade: Review different technologies and who needs them and why. Code with Photon Robots</p>	<p>2nd Grade: CommonSense.org internet safety activity</p> <p>Kindergarten-2nd Grade: Discussion about technology and work with different coding sites.</p>
March	<p>TECHNOLOGY: How do robotics use block coding?</p> <p>3.5.K-2.X. Develop a plan in order to complete a task. 3.5.K-2.DD. Collaborate effectively as a member of a team</p>	3.5.K-2.V. Explain that materials are selected for use because they possess desirable properties and characteristics. 3.5.K-2.A. Identify and use everyday symbols	Robots and their accompanying programs may use a variety of coding languages to program the robot to move. The dashbot, sphero indi, and photon use block coding to make the robotics move.	Students will code different robots to complete a variety of tasks.	<p>Kindergarten: Dashbot Coding First Grade: Sphero Indi 2nd Grade: Photon Robot</p>	<p>Kindergarten-2nd Grade: Robotic Coding</p>
April	<p>ENGINEERING: What are the challenges when implementing the engineering design process?</p>	3.5.K-2.V. Explain that materials are selected for use because they possess desirable properties and characteristics. 3.5.K-2.A. Identify and use everyday symbols	Engineers identify a problem and then create a tool to help them solve the problem. Engineers follow the design process to create their tool. Many engineers work together as a team to create their projects.	Students will plan, design, create, and test two different challenges. Students will work together as a team. Students will begin typing skills	<p>Kindergarten: Spring Engineer Bins and keyboard skills First Grade: Cup stacking and keyboard skills Second Grade: Paper Airplane Contest and keyboard skills</p>	<p>Kindergarten-2nd Grade: Engineering skills and keyboard skills</p>
May	<p>TECHNOLOGY: How are robotics able to move?</p>	3.5.K-2.X. Develop a plan in order to complete a task.	Robots and their accompanying programs may use a variety of coding languages to program the robot to move. The dashbot, sphero indi, and photon use We will review apps, engineering skills, and robotics in our final week.	Students will experiment with different robotics and see which one is best to complete the task.	<p>Kindergarten: Summer Beebot Boards and Ozobot Challenges First Grade: Photon Robot Challenges 2nd Grade: Photon Robot Challenges</p>	<p>Kindergarten-2nd Grade: Robot Challenges</p>
June	<p>REVIEW: Students will review coding and engineering skills taught throughout the year.</p> <p>3.5.K-2.B. Describe qualities of everyday products. 3.5.K-2.A. Identify and use everyday symbols</p>	3.5.K-2.BB. Compare the natural world and human-made world 3.5.K-2.AAA. Demonstrate that creating can be done by anyone 3.5.K-2.I. Compare simple technologies to evaluate their impacts. 3.5.K-2.B. Describe qualities of everyday products. 3.5.K-2.A. Identify and use everyday symbols	Students will focus on teamwork, engineering, and coding skills in the different stations.	Students will review apps, engineering, and robotics stations.	<p>Kindergarten-2nd Grade: Engineering, coding, and robotics stations.</p>	<p>Kindergarten-2nd Grade: Engineering, coding, and robotics stations</p>