Standards: Next Generation Science Standards, pgs. 35-37, 63, 68-70, 102 and ISTE Standards for Students, pgs. 3-4

Chip, Chip, Hooray! Semiconductors 1: Alignment Table
Chip, Chip Hooray! Semiconductors 1: Course Map
- Unit 1: Silicon Oasis: Exploring the Wonders of Semiconductors in Idaho and Beyond
- Unit 2: Chip Chase: Curious about Semiconductors
- Unit 3: Circuit Crafters: Lighting the Path of Innovation
- Unit 4: Chip Forge: Semiconductor Manufacturing
- Unit 5: Beyond Silicon: Exploring the Future of Semiconductor Science
- Unit 6: Unlocking the Future: Exploring the Careers of the Semiconductor Industry
- Unit 7: Setting Sail: Charting Your Course to a Successful Semiconductor Career
- Unit 8: Semiconductor Innovators: Paving the Way for Idaho's Future and Beyond

Chip, Chip, Hooray! Semiconductors 1: Alignment Table

Semester	A Unit 1	A Unit 2	A Unit 3	A Unit 4	A Unit 5	A Unit 6	A Unit 7	A Unit 8
HS-PS1-1		x	x		x			
HS-PS1-2					x			
HS-PS1-3		x			x			
HS-ETS1-1					x			
HS-ETS1-2					x			
HS-ETS1-3		x			x			
MS-PS1-1	x	x						
MS-PS1-2		x						
MS-PS1-3	x				x			
MS-PS1-4		x						

MS-ETS1-1		x			x			
MS-ETS1-2		x			x			
MS-ETS1-3			x					
MS-ETS1-4			x					
1.1.a.			x			x	x	x
1.1.b.						x	x	x
1.1.c.			x	x		x	x	x
1.1.d.	x		x	x	x			x
1.2.a.					x			x
1.2.b.					x			x
1.2.c.					x			x
1.2.d.					x			x
1.3.a.					x	x	x	x
1.3.b.					x	x		
1.3.c.				x	x	x	x	x
1.3.d.		x		x	x	x	x	
1.4.a.			x		x			
1.4.b.			x		x			
1.4.c.			x					
1.4.d.	x		x					
1.5.a.			x		x			
1.5.b.			x					

1.5.c.			x		x			
1.5.d.				x				
1.6.a.	x	x			x			x
1.6.b.	x	x						x
1.6.c.	x	x			x			x
1.6.d.	x	x			x			x
1.7.a.				x				
1.7.b.				x				
1.7.c.				x				
1.7.d.		x		x	x			

Chip, Chip Hooray! Semiconductors 1: Course Map
Unit 1: Silicon Oasis: Exploring the Wonders of Semiconductors in Idaho and Beyond

National Standards	Unit Objectives
Next Generation Science Standards MS-PS1-1 Develop models to describe the atomic composition of simple molecules and extended structures. MS-PS1-3 Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. **ISTE** 1.1.d. Understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring	• define semiconductors and describe their role in modern technology. • showcase the impact semiconductors have in your daily life. • communicate clearly in both written and oral formats by organizing your thoughts logically, using appropriate language, and presenting your ideas effectively to a target audience.

emerging technologies. 1.4.d. Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems. 1.6.a. Choose the appropriate platforms and digital tools for meeting the desired objectives of their creation or communication. 1.6.b. Create original works or responsibly repurpose or remix digital resources into new creations. 1.6.c. Use digital tools to visually communicate complex ideas to others. 1.6.d. Publish or present content that customizes the message and medium for their intended audiences.	
Lesson 1: Spark Your Curiosity: The Electrifying World of Semiconductors	
Lesson Objectives 1. define what a semiconductor is. ○ correlation: MS-PS1-1 2. explore the role of semiconductors in modern technology. ○ correlation: MS-PS1-3	Assessments ● Objective 1: Lesson 1: Spark Your Curiosity: The Electrifying World of Semiconductors interactive ● Objective 2: U1D1: Your Life Without Semiconductors
Lesson 2: Exploring Idaho: Semiconductors are Everywhere!	
Lesson Objectives 1. identify semiconductor-based devices in daily life. ○ correlation: MS-PS1-3 2. explain the role of semiconductors in at least two devices you use daily. ○ correlation: MS-PS1-3 3. discuss the purpose and value of work. ○ correlation: 1.4.d.	Assessments ● Objective 1: U1D2: Semiconductors Everyday ● Objective 2: U1D2: Semiconductors Everyday ● Objective 3: U1D2: Semiconductors Everyday
Lesson 3: Presenting with Power!	
Lesson Objectives 1. define semiconductors and describe their role in modern	Assessments ● Objective 1: U1A1: Presentation Draft

technology. ○ correlation: MS-PS1-3 2. showcase the impact semiconductors have in your daily life. ○ correlation: MS-PS1-3, 1.1.d. 3. communicate clearly in both written and oral formats by organizing your thoughts logically, using appropriate language, and presenting your ideas effectively to a target audience. ○ correlation: 1.6.a., 1.6.b., 1.6.c., 1.6.d.	● Objective 2: U1A1: Presentation Draft ● Objective 3: U1A1: Presentation Draft

Unit 2: Chip Chase: Curious about Semiconductors

National Standards	Unit Objectives
Next Generation Science Standards HS-PS1-1 Analyze complex real-world problems by specifying criteria and constraints for successful solutions. HS-PS1-3 Evaluate a solution to a complex real-world problem. HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs. MS-PS1-1 Develop models to describe the atomic composition of simple molecules and extended structures. MS-PS1-2 Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. MS-PS1-4 Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	● explain the concept of conductivity in semiconductors and how it can be controlled through doping. ● distinguish between intrinsic and extrinsic semiconductors. ● explore the different types of semiconductor materials and their properties. ● employ problem-solving and a desire to learn to determine the best semiconductor material for a given situation.

ISTE 1.3.d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions. 1.6.a. Choose the appropriate platforms and digital tools for meeting the desired objectives of their creation or communication. 1.6.b. Create original works or responsibly repurpose or remix digital resources into new creations. 1.6.c. Use digital tools to visually communicate complex ideas to others. 1.6.d. Publish or present content that customizes the message and medium for their intended audiences. 1.7.d. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.	
Lesson 1: Unlocking the Secrets: Conductivity and Doping	
Lesson Objectives 1. define conductivity and differentiate conductive and non-conductive materials. ○ correlation: MS-PS1-1 2. explain the difference between intrinsic and extrinsic semiconductors and identify examples of each. ○ correlation: MS-PS1-1, MS-PS1-2, MS-PS1-4 3. explain how common dopants affect conductivity. ○ correlation: MS-PS1-1, MS-PS1-2, MS-PS1-4	Assessments ● Objective 1: Lesson 1: Unlocking the Secrets: Conductivity and Doping interactive ● Objective 2: Lesson 1: Unlocking the Secrets: Conductivity and Doping interactive ● Objective 3: U2A1: Dope and Draw: Visualizing Extrinsic Semiconductors
Lesson 2: Unlocking the Power: Exploring Advantages and Disadvantages	
Lesson Objectives 1. identify the different types of semiconductor materials. ○ correlation: MS-PS1-1, MS-PS1-2, MS-PS1-4 2. describe the properties of types of semiconductor materials. ○ correlation: MS-PS1-1, MS-PS1-2, MS-PS1-4	Assessments ● Objective 1: Lesson 2: Unlocking the Power: Exploring Advantages and Disadvantages interactive ● Objective 2: U2D1: Pros and Cons Infographic ● Objective 3: U2D1: Pros and Cons Infographic

3. evaluate the advantages and disadvantages of different semiconductor materials for specific applications. ○ correlation: HS-PS1-1, MS-ETS1-1, MS-ETS1-2, 1.6.a., 1.6.b., 1.6.c.,1.6.d.	
Lesson 3: Semiconductor Solution Challenge	
Lesson Objectives 1. explain the concept of conductivity in semiconductors and how it can be controlled through doping. ○ correlation: MS-PS1-1, MS-PS1-2, MS-PS1-4 2. distinguish between intrinsic and extrinsic semiconductors. ○ correlation: MS-PS1-1, MS-PS1-2, MS-PS1-4 3. explore the different types of semiconductor materials and their properties. ○ correlation: MS-PS1-1, MS-PS1-2, MS-PS1-4 4. employ problem-solving and a desire to learn to determine the best semiconductor material for a given situation. ○ correlation: HS-PS1-1, HS-PS1-3, HS-ETS1-3, MS-ETS1-1, MS-ETS1-2, 1.3.d., 1.7.d.	Assessments ● Objective 1: U2A2: Can You Hack It on Mars? ● Objective 2: U2A2: Can You Hack It on Mars? ● Objective 3: U2A2: Can You Hack It on Mars? ● Objective 4: U2A2: Can You Hack It on Mars?

Unit 3: Circuit Crafters: Lighting the Path of Innovation

Idaho Standards	Unit Objectives
Next Generation Science Standards HS-PS1-1 Analyze complex real-world problems by specifying criteria and constraints for successful solutions. MS-ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. MS-ETS1-4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process	● build circuits on a breadboard using resistors, LEDs, potentiometers, push buttons, and jumper wires. ● test your circuits through observation. ● pictorially represent and explain how circuits function. ● add an LED to the circuit to create a light sensor that can be used to control the LED's brightness. ● recognize the value of failure as a learning opportunity, recover from setbacks by analyzing and learning from mistakes, and develop resilience and perseverance in

such that an optimal design can be achieved. **ISTE** 1.1.a. Set learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process to improve learning outcomes. 1.1.c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways. 1.1.d. Understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies. 1.4.a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems. 1.4.b. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks. 1.4.c. Develop, test and refine prototypes as part of a cyclical design process. 1.4.d. Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems. 1.5.a. Formulate problem definitions suited for technologyassisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions. 1.5.b. Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making. 1.5.c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	the face of challenges.
Lesson 1: Unveiling the Circuit's Secrets	
Lesson Objectives 1. identify the separate parts of a breadboard. ○ correlation: 1.4.a., 1.4.b., 1.4.c.	Assessments ● Objective 1: Lesson 1: Unveiling the Circuit's Secrets interactive

2. explain the function of the parts of a breadboard. ○ correlation: 1.4.a., 1.4.b., 1.4.c. 3. install the Arduino IDE and connect your Uno R3 board to your computer. ○ correlation: 1.4.a., 1.4.b., 1.4.c.	● Objective 2: Lesson 1: Unveiling the Circuit's Secrets interactive ● Objective 3: U3A1: Arduino IDE Setup
Lesson 2: Building Electronic Circuits	
Lesson Objectives 1. identify the separate parts of a basic circuit. ○ correlation: 1.4.a., 1.4.b., 1.4.c. 2. define major parts of a circuit as separate items. ○ correlation: 1.4.a., 1.4.b., 1.4.c. 3. discuss what changes you made to your circuit as you went through various trials. ○ correlation: HS-PS1-4, MS-ETS1-3, MS-ETS1-4, 1.1.a., 1.4.d.	Assessments ● Objective 1: U3A2: LED Circuit Schematic ● Objective 2: U3A2: LED Circuit Schematic, U3D1: LED Circuit Discoveries ● Objective 3: U3D1: LED Circuit Discoveries
Lesson 3: Expanding Electronic Circuits	
Lesson Objectives 1. describe the components of a circuit. ○ correlation: HS-PS1-4, MS-ETS1-3, MS-ETS1-4, 1.1.c., , 1.1.d., 1.5.a., 1.5.b., 1.5.c. 2. discuss what changes you made to your circuit as you went through various trials. ○ correlation: HS-PS1-4, MS-ETS1-3, MS-ETS1-4, 1.1.a., 1.4.d.	Assessments ● Objective 1: U3A3: Circuit Builder Reflection ● Objective 2: U3A3: Circuit Builder Reflection

Unit 4: Chip Forge: Semiconductor Manufacturing

National Standards	Unit Objectives
ISTE 1.1.c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	● describe the process of manufacturing semiconductors. ● explain the importance of the cleanroom environment in semiconductor manufacturing. ● identify common semiconductor devices and describe

1.1.d. Understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies. 1.3.c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions. 1.3.d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions. 1.5.d. Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions. 1.7.a. Use digital tools to connect with peers from a variety of backgrounds recognizing diverse viewpoints and broadening mutual understanding. 1.7.b. Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints. 1.7.c. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal. 1.7.d. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.	their functions. ● explain the basic principles of CMOS, identifying its advantages and disadvantages in electronic devices. ● present examples of practical applications for semiconductor devices. ● collaborate with a team to determine the best semiconductor device to meet the needs of a given industry.
Lesson 1: Semiconductor Manufacturing and Cleanrooms	
Lesson Objectives 1. describe the process of manufacturing semiconductors. ○ correlation: 1.1.c., 1.1.d., 1.3.c., 1.5.d. 2. explain the classification of cleanrooms found in the semiconductor industry. ○ correlation: 1.1.c., 1.1.d., 1.3.c. 3. describe cleanrooms and gowning requirements found across the industry. ○ correlation: 1.1.c., 1.1.d., 1.3.c. 4. explain the importance of the cleanroom environment in semiconductor manufacturing.	Assessments ● Objective 1: U4A1: Safety Poster ● Objective 2: U4A1: Safety Poster ● Objective 3: U4A1: Safety Poster ● Objective 4: U4A1: Safety Poster

○ correlation: 1.1.c., 1.1.d., 1.3.c.	
Lesson 2: Exploring Semiconductor Devices	
Lesson Objectives 1. describe the function of analog, digital, and memory semiconductor devices. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d. 2. compare and contrast analog and digital devices. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d. 3. explain the two main types of memory semiconductors: DRAM and NAND. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d. 4. sort devices that contain analog, digital, or memory semiconductors. ○ Correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d.	Assessments ● Objective 1: U4D1: Team 1 Challenge Collaboration Area ● Objective 2: U4D1: Team 1 Challenge Collaboration Area ● Objective 3: U4D1: Team 1 Challenge Collaboration Area ● Objective 4: U4L2: Exploring Semiconductor Devices interactive
Lesson 3: The Alphabet Soup of MOSFETs	
Lesson Objectives 1. describe CMOS, NMOS, and PMOS. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d. 2. compare and contrast NMOS, PMOS, and CMOS. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d. 3. describe one way that CMOS is used in a device you use everyday. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d.	Assessments ● Objective 1: U4L3: The Alphabet Soup of MOSFETs interactive ● Objective 2: U4L3: The Alphabet Soup of MOSFETs interactive ● Objective 3: U4D1: Team 1 Challenge Collaboration Area
Lesson 4: Team Challenge	
Lesson Objectives	Assessments

1. give examples of practical applications for semiconductor devices. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d. 2. collaborate with a team to determine the best semiconductor device to meet the needs of a given industry. ○ correlation: 1.1.d., 1.3.d., 1.7.a., 1.7.b., 1.7.c., 1.7.d.	● Objective 1: U4A2: Your Role Submission, U4D2: Presentation Forum ● Objective 2: U4A2: Your Role Submission, U4D2: Presentation Forum

Unit 5: Beyond Silicon: Exploring the Future of Semiconductor Science

Idaho Standards	Unit Objectives
Next Generation Science Standards HS-PS1-1 Analyze complex real-world problems by specifying criteria and constraints for successful solutions. HS-PS1-2 Design a solution to a complex real-world problem. HS-PS1-3 Evaluate a solution to a complex real-world problem. HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions. HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, manageable problems. HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs. MS-PS1-3 Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	● provide examples of how semiconductors are used in everyday technology. ● discuss the potential future developments in semiconductor technology. ● integrate critical thinking and ethical reasoning to evaluate complex problems and dilemmas related to potential future developments in semiconductor technology. ● identify and assess potential solutions. ● make a recommendation for a development direction that balances competing interests and values. ● articulate and communicate your ethical reasoning clearly and persuasively to others.

ISTE 1.1.d. Understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies. 1.2.a. Manage their digital identity and understand the lasting impact of their online behaviors on themselves and others and make safe, legal and ethical decisions in the digital world. 1.2.b. Demonstrate empathetic, inclusive interactions online and use technology to responsibly contribute to their communities. 1.2.c. Safeguard their well-being by being intentional about what they do online and how much time they spend online. 1.2.d. Take action to protect their digital privacy on devices and manage their personal data and security while online. 1.3.a. Use effective research strategies to find resources that support their learning needs, personal interests and creative pursuits. 1.3.b. Evaluate the accuracy, validity, bias, origin, and relevance of digital content. 1.3.c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions. 1.3.d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions. 1.4.a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems. 1.4.b. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks. 1.5.a. Formulate problem definitions suited for technologyassisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions. 1.5.c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	

1.6.a. Choose the appropriate platforms and digital tools for meeting the desired objectives of their creation or communication. 1.6.c. Use digital tools to visually communicate complex ideas to others. 1.6.d. Publish or present content that customizes the message and medium for their intended audiences. 1.7.d. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.	
Lesson 1: Choose-Your-Own Tech Adventure	
Lesson Objectives 1. provide examples of how semiconductors are used in everyday technology. ○ correlation: MS-PS1-3, 1.1.d. 2. discuss the potential future developments in semiconductor technology. ○ correlation: HS-PS1-1, HS-ETS1-1, 1.1.d., 1.5.a.	Assessments ● Objective 1: U5A1: Technology Timeline ● Objective 2: U5A1: Technology Timeline
Lesson 2: Smaller, Faster, Right-er?	
Lesson Objectives 1. discuss the potential future developments in semiconductor technology. ○ correlation: HS-PS1-1, HS-ETS1-1, 1.1.d., 1.5.a. 2. identify possible ethical concerns within an area of future semiconductor technology development. ○ correlation: HS-ETS1-1, MS-ETS1-1, 1.1.d., 1.3.a., 1.3.b., 1.3.c., 1.3.d., 1.5.a., 1.5.c. 3. discuss cost or resource availability problems that may impact future developments in semiconductor technology. ○ correlation: HS-PS1-1, HS-ETS1-1, MS-ETS1-2, MS-ETS1-3, 1.4.a., 1.5.a., 1.5.c.	Assessments ● Objective 1: U5D1: How Far Can We Go? ● Objective 2: U5D1: How Far Can We Go? ● Objective 3: U5D1: How Far Can We Go?
Lesson 3: Balancing Tech and Ethics	

Lesson Objectives 1. discuss the potential future developments in semiconductor technology. ○ correlation: HS-PS1-1, HS-ETS1-1, 1.1.d., 1.5.a. 2. identify potential solutions to ethical and practical technology concerns. ○ correlation: HS-PS1-2, HS-ETS1-2, MS-ETS1-1 3. assess the effectiveness of potential solutions to technology concerns. ○ correlation: HS-PS1-3, HS-ETS1-3, MS-ETS1-2 4. make a recommendation for a development direction that balances competing interests and values. ○ correlation: HS-PS1-3, HS-ETS1-3, MS-ETS1-2, 1.4.b.	Assessments ● Objective 1: U5A2: Addressing the Problems ● Objective 2: U5A2: Addressing the Problems ● Objective 3: U5A2: Addressing the Problems ● Objective 4: U5A2: Addressing the Problems
Lesson 4: Presenting Solutions	
Lesson Objectives 1. make a recommendation for a development direction that balances competing interests and values. ○ correlation: HS-PS1-3, HS-ETS1-3, MS-ETS1-2, 1.4.b. 2. articulate and communicate your ethical reasoning clearly and persuasively to others. ○ correlation: 1.2.a., 1.2.b., 1.2.c., 1.2.d., 1.6.a., 1.6.c., 1.6.d., 1.7.d.	Assessments ● Objective 1: U5A3: Presentation Outline ● Objective 2: U5A3: Presentation Outline

Unit 6: Unlocking the Future: Exploring the Careers of the Semiconductor Industry

National Standards	Unit Objectives
ISTE 1.1.a. Set learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process to improve learning outcomes.	● identify different career paths in the semiconductor field. ● describe the skills and education needed for these careers. ● discuss the potential job outlook and salary information

1.1.b. Build networks and customize their learning environments in ways that support the learning process. 1.1.c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways. 1.3.a. Use effective research strategies to find resources that support their learning needs, personal interests and creative pursuits. 1.3.b. Evaluate the accuracy, validity, bias, origin, and relevance of digital content. 1.3.c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions. 1.3.d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.	for careers in the semiconductor industry. ● create a career portfolio outlining your career goals and why you are interested in this career.
Lesson 1: What Job Fits You Best?	
Lesson Objectives 1. identify different career paths in the semiconductor field. ○ correlation: 1.1.a., 1.3.a., 1.3.b., 1.3.c., 1.3.d. 2. identify three career clusters most likely to fit your skills and personality. ○ correlation: 1.1.a., 1.3.a., 1.3.b., 1.3.c., 1.3.d. 3. list jobs included in your top three career clusters. ○ correlation: 1.1.d., 1.3.a., 1.3.b., 1.3.c., 1.3.d.	Assessments ● Objective 1: U6D1: My Inventory Results ● Objective 2: U6A1: My Interest and Personality, U6A2: Career Cluster Survey, U6D1: My Inventory Results, U6A3: My Career Cluster Investigation ● Objective 3: U6A3: My Career Cluster Investigation
Lesson 2: Exploring the Tech Industry	
Lesson Objectives 1. describe the skills and education needed for these careers. ○ correlation: 1.1.a., 1.3.a., 1.3.b., 1.3.c., 1.3.d. 2. compare skills required for specific career clusters with your personal strengths. ○ correlation: 1.1.a., 1.1.c., 1.3.a., 1.3.b., 1.3.c., 1.3.d.	Assessments ● Objective 1: U6A4: Comparing Skills and Strengths ● Objective 2: U6A4: Comparing Skills and Strengths

Lesson 3: Is Everyone an Engineer?	
Lesson Objectives 1. explain your process for identifying careers that you might want to pursue for the future. ○ correlation: 1.1.b., 1.3.a., 1.3.b., 1.3.c., 1.3.d. 2. describe the skills and education needed for these careers. ○ correlation: 1.1.a., 1.1.c., 1.1.d., 1.3.a., 1.3.b., 1.3.c., 1.3.d. 3. discuss the potential job outlook and salary information for careers in the semiconductor industry. ○ correlation: 1.1.c., 1.3.a., 1.3.b., 1.3.c., 1.3.d.	Assessments ● Objective 1: U6A5: Exploring Careers ● Objective 2: U6A5: Exploring Careers ● Objective 3: U6A5: Exploring Careers

Unit 7: Setting Sail: Charting Your Course to a Successful Semiconductor Career

Idaho Standards	Unit Objectives
ISTE 1.1.a. Set learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process to improve learning outcomes. 1.1.b. Build networks and customize their learning environments in ways that support the learning process. 1.1.c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways. 1.3.a. Use effective research strategies to find resources that support their learning needs, personal interests and creative pursuits. 1.3.c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions. 1.3.d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing	● list high school courses and extracurricular activities that are relevant for pursuing a career in the semiconductor industry. ● describe options for further education and training in the semiconductor field.

answers and solutions.	
Lesson 1: The High School Years	
Lesson Objectives 1. identify at least three elective courses that interest you. ○ correlation: 1.1.a., 1.1.b., 1.3.a., 1.3.c., 1.3.d. 2. identify at least two extracurricular activities that interest you. ○ correlation: 1.1.a., 1.1.b., 1.3.a., 1.3.c., 1.3.d.	Assessments ● Objective 1: U7A1: Exploring Electives and Activities, U7D1: Interview with Your Counselor ● Objective 2: U7A1: Exploring Electives and Activities, U7D1: Interview with Your Counselor
Lesson 2: My High School Course Plan	
Lesson Objectives 1. plan a course schedule that meets identified requirements and interests for high school. ○ correlation: 1.1.c., 1.3.a., 1.3.c., 1.3.d. 2. get approval of the plan from counselors and parents/guardians. ○ correlation: 1.1.c.	Assessments ● Objective 1: U7A2: My High School Plan ● Objective 2: U7A3: Plan Review and Approval
Lesson 3: What's After High School?	
Lesson Objectives 1. identify at least two options you might pursue after high school. ○ correlation: 1.1.a., 1.1.b., 1.3.a., 1.3.c., 1.3.d. 2. reflect on your plan for the future. ○ correlation: 1.1.a., 1.1.b., 1.3.a., 1.3.c., 1.3.d.	Assessments ● Objective 1: U7A4: Planning for Life After High School ● Objective 2: U7A4: Planning for Life After High School

Unit 8: Semiconductor Innovators: Paving the Way for Idaho's Future and Beyond

National Standards	Unit Objectives
ISTE	● research one semiconductor company located in Idaho,

1.1.a. Set learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process to improve learning outcomes. 1.1.b. Build networks and customize their learning environments in ways that support the learning process. 1.1.c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways. 1.1.d. Understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies. 1.2.a. Manage their digital identity and understand the lasting impact of their online behaviors on themselves and others and make safe, legal and ethical decisions in the digital world. 1.2.b. Demonstrate empathetic, inclusive interactions online and use technology to responsibly contribute to their communities. 1.2.c. Safeguard their well-being by being intentional about what they do online and how much time they spend online. 1.2.d. Take action to protect their digital privacy on devices and manage their personal data and security while online. 1.3.a. Use effective research strategies to find resources that support their learning needs, personal interests and creative pursuits. 1.3.c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions. 1.6.a. Choose the appropriate platforms and digital tools for meeting the desired objectives of their creation or communication. 1.6.b. Create original works or responsibly repurpose or remix digital resources into new creations. 1.6.c. Use digital tools to visually communicate complex ideas to others. 1.6.d. Publish or present content that customizes the message and medium for their intended audiences.	fanalyzing the company's history, products, and impact on the state's economy. ● identify paths to reaching your career goals in the semiconductor industry. ● trace each path and select the one that best aligns with your goals. ● defend your choice based on your personal interests, needs, and future goals.
Lesson 1: Tech Companies in Idaho and My Future Lifestyle	

Lesson Objectives 1. explore wants and needs related to your future lifestyle goals. ○ correlation: 1.1.a., 1.3.a. 2. discuss the role of planning in achieving your future lifestyle goals. ○ correlation: 1.1.b., 1.2.b. 3. identify semiconductor and technology companies in the state of Idaho. ○ correlation: 1.1.b., 1.2.b., 1.3.c.	Assessments ● Objective 1: U8A1: Plan Smart ● Objective 2: U8D1: Looking Ahead ● Objective 3: U8D1: Looking Ahead
Lesson 2: Success on the Job	
Lesson Objectives 1. explain the importance of having a strong work ethic. ○ correlation: 1.1.a., 1.1.b. 2. describe some key personal characteristics associated with a strong work ethic. ○ correlation: 1.1.a., 1.2.a. 3. identify three or more employability skills you already have. ○ correlation: 1.1.b., 1.2.c., 1.2.d. 4. identify two or more employability skills you want to improve. ○ correlation: 1.1.a., 1.2.c., 1.2.d.	Assessments ● Objective 1: U8A3: My Idaho Company and Me ● Objective 2: U8A3: My Idaho Company and Me ● Objective 3: U8A2: My Workplace Skills Review ● Objective 4: U8A2: My Workplace Skills Review
Lesson 3: Who Am I Online?	
Lesson Objectives 1. explain the importance of a positive online presence in preparing for a future career. ○ correlation: 1.1.a., 1.2.c., 1.2.d. 2. explain the importance of online safety and security. ○ correlation: 1.1.a., 1.2.c., 1.2.d.	Assessments ● Objective 1: U8A4: My Online Presence ● Objective 2: U8A4: My Online Presence
Lesson 4: Calling Future Employees!	
Lesson Objectives	Assessments

1. research one semiconductor company located in Idaho, analyzing the company's history, products, and impact on the state economy. ○ correlation: 1.1.b., 1.1.c., 1.6.a., 1.6.b., 1.6.c., 1.6.d. 2. identify paths to reaching your career goals in the semiconductor industry. ○ correlation: 1.1.a., 1.1.c., 1.6.a., 1.6.b., 1.6.c., 1.6.d. 3. trace each path and select the one that best aligns with your goals. ○ correlation: 1.1.a., 1.1.c., 1.1.d., 1.6.a., 1.6.b., 1.6.c., 1.6.d.	● Objective 1: U8A5: Recruitment Poster Outline ● Objective 2: U8A5: Recruitment Poster Outline ● Objective 3: U8A5: Recruitment Poster Outline