**Pottsville School District Curriculum Year at a Glance –Science**

Pottsville School District “Year at a Glance” Kindergarten

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|  | Weather and Climate | Pushes and Pulls | Needs of Plants and Animals | Humans and the Environment |
|  | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 3 |
| Standards | K-ESS2-1K-ESS3-2K-PS3-1K-PS3-2K-ETS1-1K-ETS1-2 | K-PS2-1K-PS2-2K-ETS1-1K-ETS1-2 | K-LS1-1K-ESS3-1 | K-ESS2-2K-ESS3-1K-ESS3-3K-ETS1-1 |
| Prerequisite skills(prior knowledge, skills needed for student to master the standard) | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  |
| Key Strategies or Action Words | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities |
| Assessments of Power Standards:Formative and Summative | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer |

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|  | Space Systems: Patterns | Sound | Light | Structures & Functions |
|  | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 3 |
| Standards | 1-ESS1-11-ESS1-2 | 1-PS4-11-PS4-41-ETS1-11-ETS1-2 | 1-PS4-21-PS4-31-PS4-41-ETS1-11-ETS1-2 | 1-LS1-11-LS1-21-LS1-31-ETS1-1 |
| Prerequisite skills(prior knowledge, skills needed for student to master the standard) | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating  |
| Key Strategies or Action Words | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence |
| Assessments of Power Standards:Formative and Summative | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer |

Pottsville School District “Year at a Glance” 1st Grade

Pottsville School District “Year at a Glance”2nd Grade

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|  | Land & Water | Processes that Shape the Earth | Matter: Properties & Changes | Habitats |
|  | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 3 |
| Standards | 2-ESS2-22-ESS2-3 | 2-ESS1-12-ESS2-12-ETS1-12-ETS1-2 | 2-PS1-12-PS1-22-PS1-32-PS1-4 | 2-LS2-12-LS2-22-LS4-12-ETS1-1 |
| Prerequisite skills(prior knowledge, skills needed for student to master the standard) | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating -Claim/Evidence | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating-Claim/Evidence  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating-Claim/Evidence  | -Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating-Claim/Evidence  |
| Key Strategies or Action Words | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence |
| Assessments of Power Standards:Formative and Summative | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment |

Pottsville School District “Year at a Glance” 3rd Grade

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|  | Life Cycles & Traits | Adaptations | Forces | Weather & Climate |
|  | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 3 |
| Standards | 3-LS1-13-LS3-13-LS3-23-LS4-2 | 3-LS2-13-LS4-13-LS4-33-LS4-43-ETS1-1 | 3-PS2-13-PS2-23-PS2-33-PS2-43-ETS1-1 | 3-ESS2-13-ESS2-23-ESS3-13-ETS1-1 |
| Prerequisite skills(prior knowledge, skills needed for student to master the standard) | -Basic Math Skills-Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating -Claim/Evidence | -Basic Math Skills-Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating-Claim/Evidence  | -Basic Math Skills-Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating-Claim/Evidence  | -Basic Math Skills-Observation Skills-Recognizing Cause & Effect-Recognizing Patterns-Reasoning Skills-Asking Questions-Communicating-Claim/Evidence  |
| Key Strategies or Action Words | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Claim/Evidence-Hands-on Activities | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence | -Modeling-Vocabulary building -Questioning strategies-Labs and group activities-Phenomena exploration-Predicting-Hands-on Activities-Claim/Evidence |
| Assessments of Power Standards:Formative and Summative | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment | -Observations-Think/Pair/Share-Analyzing Student Work-Exit Slips-Question/Answer-Concept Assessment |

Pottsville School District 4th grade Science “Year at a Glance”

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|  | Chapter or Unit(s) | Chapter or Unit(s) | Chapter or Unit(s) | Chapter or Unit(s) |
|  | Target Dates: 1st Nine Weeks | Target Dates: 2nd Nine Weeks | Target Dates: 3rd Nine Weeks | Target Dates: 4th Nine Weeks |
| Standards | 4-LS1-1 4-PS4-2 4-LS1-2 4-ETS1-1 4-ETS1-2 4-ETS1-3 | 4-PS3-1 4-PS3-3 4-PS3-2 4-PS3-44-ESS3-1 4-ETS1-1 4-ETS1-2 4-ETS1-3 | **4-PS4-1**4-PS3-2 4-PS4-3 4-ETS1-1 4-ETS1-2 4-ETS1-3 | 4-ESS2-1 4-ESS1-1 4-ESS2-2 4-ESS3-2 4-ETS1-1 4-ETS1-2 4-ETS1-3 |
| Foundational Skills | -Ask questions, make a hypothesis (predictions,) observe, analyze, and interpret data-Animal and plant adaptations-Animal and plant environments | -Explaining-Cause and Effect-Ask questions, make a hypothesis (predictions,) observe, analyze, and interpret data | -Develop a model-Understand and describe patterns-Generate and compare-Ask questions, make a hypothesis (predictions,) observe, analyze, and interpret  | -Identify evidence-Generate and compare-Ask questions, make a hypothesis (predictions,) observe, analyze, and interpret data |
| Key Strategies or Action Words | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Construct an argument-Use a model to describe-Develop a model to describe-Observation-Inference-Adaptation-Environment-Internal/External  | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Construct an explanation-Apply scientific ideas-Energy (mechanical, electrical, light, thermal, and sound)-Energy transfer-Natural energy resources-Fossil fuels | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Develop a model-Generate and compare multiple solutions-Communication-Waves-Transfer-Patterns | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Identify-Generate and compare-Weathering, erosion, and deposition-Processes and formations-Plate tectonics-Fossils-The rock cycle-Igneous, Metamorphic, and Sedimentary  |
| Assessments of Power Standards:Formative and Summative | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Construct an argument-Use a model to describe-Develop a model to describe-Observation-Inference-Adaptation-Environment-Internal/External  | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Construct an explanation-Apply scientific ideas-Energy (mechanical, electrical, light, thermal, and sound)-Energy transfer-Natural energy resources-Fossil fuels | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Develop a model-Generate and compare multiple solutions-Communication-Waves-Transfer-Patterns | -Using the Scientific Process, Engineering Design Process, and CER (Claim, Evidence, and Reasoning)-Cooperative learning-Identify-Generate and compare-Weathering, erosion, and deposition-Processes and formations-Plate tectonics-Fossils-The rock cycle-Igneous, Metamorphic, and Sedimentary rocks |

Pottsville School District “Year at a Glance” Science 5th Grade

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|  | **Unit 1: Engineering and science practices**  | **Unit 2: Space systems** | **Unit 3: Earth Systems** | **Unit 4: Structure and properties of matter** | **Unit 5: Matter and energy in organisms and ecosystems** |
|  | Target time frame: 6 weeks | Target time frame: 6 weeks | Target time frame: 6 weeks | Target time frame: 9 weeks | Target time frame: 9 weeks |
| Standards | 5-ETS1-15-ETS1-25-ETS1-3 | 5-ESS1-15-ESS1-25-PS2-1\*All ETS1 Standards continual  | 5-ESS2-15-ESS2-2: 5-ESS3-1: \*All ETS1 Standards continual  | 5-PS1-1: 5-PS1-25-PS1-3: 5-PS1-4\*All ETS1 Standards continual  | 5-PS3-1: 5-LS1-1:5-LS2-1: \*All ETS1 Standards continual  |
| Prerequisite skills(prior knowledge, skills needed for student to master the standard) | \*Asking questions, making observations, and gathering information help in solving problems\*Understand the problem BEFORE working on a solution.\* One problem can have many solutions.\*What a model is.\* Solutions need to be tested and designs compared.\*Types of graphs and how to read them\*What is evidence and data?\*Grade level reading/math skills\*Understand basic units of measurement (metric and imperial)\*Know how to use basic science tools (scale, ruler, stopwatch) | \*Sun is stationary-Earth and Moon move\*Days get longer or shorter depending on the season.\*Sunlight warms the earth’s surface\*Some objects give off their own light\*Objects are seen when light is available\*Grade level reading/math skills\*Understand basic units of measurement (metric and imperial)\*Know how to use basic science tools (scale, ruler, stopwatch)\*Types of graphs and how to read them\*What is evidence and data? | \*Erosion and weathering from wind and water\* Water/rainfall amounts and impacts on biodiversity\*Difference in fresh water and salt water\*Difference in weather and climate.\*Where the food and water humans use comes from.\*What a model is.\*Grade level reading/math skills\*Understand basic units of measurement (metric and imperial)\*Know how to use basic science tools (scale, ruler, stopwatch)\*Types of graphs and how to read them\*What is evidence and data? | \*Amount of heat causes changes.\*Some changes are reversible/ some are not\*States of Matter\* Things are made up of smaller parts\*Objects have properties for specific purposes.\*forces (push/pull)\*What a model is.\*Grade level reading/math skills\*Understand basic units of measurement (metric and imperial)\*Know how to use basic science tools (scale, ruler, stopwatch)\*Types of graphs and how to read them\*What is evidence and data?\*Asking questions, making observations, and gathering information help in solving problems\*Defining simple problems | \* Organisms are made up of different systems.\*How organisms use these systems for growth and repair.\*Organisms are ectothermic or endothermic.\*All living things reproduce.\*Environmental factors that impact organisms' survival.\*Energy can move/transfer through light\*What “produce energy” means=Stored form into usable form.\*What a model is.\*Grade level reading/math skills\*What is evidence and data? |
| Key Strategies or Action Words | Phenomena based learningmodelingProject based learningVocabulary buildingScience and Engineering practicesCross cutting conceptsCross curricular application of math, reading, math, and social studies.Continual observations, feedback, and discussion | Phenomena based learningmodelingProject based learningVocabulary buildingScience and Engineering practicesCross cutting concepts Cross curricular application of math, reading, math, and social studies.Continual observations, feedback, and discussion | Phenomena based learningmodelingProject based learningVocabulary buildingScience and Engineering practicesCross cutting conceptsCross curricular application of math, reading, math, and social studies.Continual observations, feedback, and discussion | Phenomena based learningmodelingProject based learningVocabulary buildingScience and Engineering practicesCross cutting concepts Cross curricular application of math, reading, math, and social studies.Continual observations, feedback, and discussion | Phenomena based learningmodelingProject based learningVocabulary buildingScience and Engineering practicesCross cutting concepts Cross curricular application of math, reading, math, and social studies.Continual observations, feedback, and discussion |
| Assessments of Power Standards:Formative and Summative | Unit testEngineering projectsEvidence based reasoning and analysisContent and skills assessments:-Nonfiction science reading passages-quizziz-Data analysis activities-IXL-FlocabularyStudent Progress tracking | Unit testLabs/projectsEvidence based writing (Claim, Evidence, reasoning)Content and skills assessments:-Nonfiction science reading passages-quizziz-Data analysis activities-IXL-FlocabularyStudent Progress tracking | Unit testLabs/projectsEvidence based writing (Claim, Evidence, reasoning)Content and skills assessments:-Nonfiction science reading passages-quizziz-Data analysis activities-IXL-FlocabularyStudent Progress tracking | Unit testLabs/projectsEvidence based writing (Claim, Evidence, reasoning)Content and skills assessments:-Nonfiction science reading passages-quizziz-Data analysis activities-IXL-FlocabularyStudent Progress tracking | Unit testLabs/projectsEvidence based writing (Claim, Evidence, reasoning)Content and skills assessments:-Nonfiction science reading passages-quizziz-Data analysis activities-IXL-FlocabularyStudent Progress tracking |

Pottsville School District 6th grade Science “Year at a Glance”

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|  | Chapter or Unit(s) **Energy** | Chapter or Unit(s) **Earth’s Systems, Human Impacts, Weather and Climate** | Chapter or Unit(s)**Structure, Function, and Information Processing** | Chapter or Unit(s)**Growth, Development, and Reproduction of Organisms** |
|  | Target Dates: 1st 9 weeks | Target Dates: 2nd 9 weeks | Target Dates: 3rd 9 weeks | Target Dates: 4th 9 weeks |
| \*Standards | 6-PS3-36-PS3-46-PS3-5 | 6-ESS2-46-ESS3-36-ESS3-46-ESS2-56-ESS2-66-ESS3-5 | 6-LS1-16-LS1-26-LS1-36-LS1-8 | 6-LS1-46-LS1-56-LS3-2 |
| Foundational Skills | * Using science tools
* Understanding units of measurement
* Converting units of measurement
* Making accurate observations
* Evaluating experimental design
* Interpreting graphs and tables
* Inferencing based on evidence/observations
* Evaluating models
* Supporting claims with evidence
* Construct, use, and present oral and written communication using scientific reasoning
 | * Using science tools
* Understanding units of measurement
* Converting units of measurement
* Making accurate observations
* Evaluating experimental design
* Interpreting graphs and tables
* Inferencing based on evidence/observations
* Evaluating models
* Supporting claims with evidence
* Construct, use, and present oral and written communication using scientific reasoning
 | * Using science tools
* Understanding units of measurement
* Converting units of measurement
* Making accurate observations
* Evaluating experimental design
* Interpreting graphs and tables
* Inferencing based on evidence/observations
* Evaluating models
* Supporting claims with evidence
* Construct, use, and present oral and written communication using scientific reasoning
 | * Using science tools
* Understanding units of measurement
* Converting units of measurement
* Making accurate observations
* Evaluating experimental design
* Interpreting graphs and tables
* Inferencing based on evidence/observations
* Evaluating models
* Supporting claims with evidence
* Construct, use, and present oral and written communication using scientific reasoning
 |
| Key Strategies or Action Words | * Phenomena based learning
* Modeling
* Project based learning
* Vocab building
* Science and Engineering practices
* Cross Cutting concepts
* Cross curricular applications of math reading, and SS.
* Continual observations, feedback,and discussion
* Student progress tracking
* Design Insulated cup Lab
* Types of Matter
* Energy transfer
* Temperature
* Mass
* Acids and bases
* Law of Conservation of matter
 | * Phenomena based learning
* Modeling
* Project based learning
* Vocab building
* Science and Engineering practices
* Cross Cutting concepts
* Cross curricular applications of math reading, and SS.
* Continual observations, feedback,and discussion

Student progress trackingEarth’s layersWater CycleNatural resourcesPollutionAir MassesCoriolis EffectOcean Influence on weatherNatural Disasters | * Phenomena based learning
* Modeling
* Project based learning
* Vocab building
* Science and Engineering practices
* Cross Cutting concepts
* Cross curricular applications of math reading, and SS.
* Continual observations, feedback,and discussion

Student progress trackingCellsLiving and non-living ThingsOrgan projectStimuli related to Brain Function | * Phenomena based learning
* Modeling
* Project based learning
* Vocab building
* Science and Engineering practices
* Cross Cutting concepts
* Cross curricular applications of math reading, and SS.
* Continual observations, feedback,and discussion

Student progress trackingReproductionGenesTraitsEnvironmental and Genetic Factors Influence Animal and plant GrowthPunnett SquaresSheep Eye Dissection |
| Assessments of Power Standards:Formative and Summative | * Exit Slips
* Labs
* ACT Aspire Interims
* Observation
* IXL
 | * Exit Slips
* Labs
* ACT Aspire Interims
* Observation
* IXL
 |  Exit Slips Labs ACT Aspire Interims Observation IXL |  Exit Slips Labs ACT Aspire Interims Observation IXL |

\*Standards:  Each nine weeks include Engineering, Technology, and Applications of Science:  6-ETS1-1, 6-ETS1-2, 6-ETS1-3, 6-ETS1-4

7th Grade Science “Year at a Glance”

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|  | Chapter or Unit(s): Physical Science | Chapter or Unit(s):Life Science | Chapter or Unit(s): Earth and Space Science | Chapter or Unit(s): Engineering, Technology and Applications of Science |
|  | Target Dates: **1st Quarter** | Target Dates: **2nd Quarter** | Target Dates: **3rd Quarter** | Target Dates: **4th Quarter** |
| Standards | 7-PS1-17-PS1-2 AR7-PS1-37-PS1-57-PS1-47-PS1-6 AR | 7-LS2-27-LS1-67-LS2-57-LS1-77-LS2-17-LS2-37-LS2-4 | 7-ESS2-1 AR7-ESS2-27-ESS3-27-ESS3-17-ESS2-3 | 7-ETS1-17-ETS1-27-ETS1-37-ETS1-4 |
| Foundational Skills | Develop ModelsGather and make sense of informationAnalyze and Interpret Data | Construct ExplanationsEvaluate DesignDevelop Models | Construct ExplanationsEvaluate DesignDevelop Models | Construct ExplanationsEvaluate DesignDevelop Models |
| Key Strategies or Action Words | Matterelementsmoleculescompoundsatomic compositionsubstancesproperties | ecosystemscycling energyinterdependent-relationshipsenvironmentorganisms | catastrophic eventsforecastingsystemscyclingflow of energygeoscience processesfossils | definedevelopevaluateanalyzemodel |
| Assessments of Power Standards:Formative and Summative | quizizzquizletformal testsshort quizzesdiscussion questionsexit slipsbellringers | quizizzquizletformal testsshort quizzesdiscussion questionsexit slipsbellringers | quizizzquizletformal testsshort quizzesdiscussion questionsexit slipsbellringers | quizizzquizletformal testsshort quizzesdiscussion questionsexit slipsbellringers |

8th Grade Integrated Science “Year at a Glance”

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|  | Chapter or Unit(s): **Lab Safety, Scientific Methods, Force & Newton’s Laws** | Chapter or Unit(s):  **Waves, EM Spectrum** | Chapter or Unit(s): **Earth/Moon/Sun systems, Stars/Galaxies/Gravity** | Chapter or Unit(s): **Genetics, Evolution** |
|  | Target Dates: **1st Quarter** | Target Dates: **2nd Quarter** | Target Dates: **3rd Quarter** | Target Dates: **4th Quarter** |
| Standards | 8-PS2-58-PS2-18-PS2-28-PS3-18-PS3-2 | 8-PS4-18-PS4-28-PS4-3 | 8-ESS1-18-ESS1-28-ESS1-38-PS2-4 | 8-LS3-18-LS4-58-LS4-18-LS4-28-LS4-38-LS3-48-LS3-6 |
| Foundational Skills | * Familiarity with basic Experimental Design
* Using safe practices in the lab
* Solve simple math formulas like AxB=C or A/B=C
* Contrast kinetic and potential energy
 | * Solve simple math formulas like AxB=C or A/B=C
 |  |  |
| Key Strategies or Action WordsKey Strategies or Action Words Continued | * Design experiments with multiple variables (electromagnets)
* Identify controls, constants, and variables in an experiment
* Demonstrate lab safety equipment
* Evaluate unsafe lab practices and how to correct them
* Evaluate graphs and models
* Newton’s Laws
* Online simulator
* Force gauges
 | * Calculations
* Electromagnetic Superheroes
* Colored Light simulator
* Gamma Rays/Nuclear Energy/Chernobyl
* Colored Light Mixer
* Listening to the Sun
 | * Scale model solar system (distance & size)
* Scale model earth, moon, sun system (distance & size)
* Model lunar phases
* Model Earth’s tilt and identify the season
* Season simulator
 | * Punnet squares
* Dominant & Recessive traits
* Queen Victoria pedigree (hemophilia)
* Mouse Lab (populations with dominant and recessive traits)
 |
| Assessments of Power Standards:Formative and Summative | * Labs
* Exams
* Exit Slips/Low Stakes Quizzes
* Observation
 | * Labs
* Exams
* Exit Slips/Low Stakes Quizzes
* Observation
* Interims
 | * Labs
* Exams
* Exit Slips/Low Stakes Quizzes
* Observation
* Interims
 | * Labs
* Exams
* Exit Slips/Low Stakes Quizzes
* Observation
 |

9th Grade Physical Science “Year at a Glance”

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|  | Chapter or Unit(s): Scientific Processes, Graphs and Graphing,  Elements, Matter and Interactions | Chapter or Unit(s): Making and Breaking Bonds, Forces Between Particles, Conservation of Matter | Chapter or Unit(s): Forces In Motion, Measuring Motion, Forces and Newton’s Laws | Chapter or Unit(s): Forces, Work and Energy, Mechanical Systems, Electricity and Magnetism |
|  | *Target Dates:* ***1st Quarter*** | Target Dates: **2nd Quarter** | Target Dates: **3rd Quarter** | Target Dates: **4th Quarter** |
| Standards | APSI-PS1-1APSI-PS1-2APSI-PS1-3APSI-PS1-4APSI-PS1-7 | APSI-PS1-1APSI-PS1-2APSI-PS1-3APSI-PS1-4APSI-PS1-7 | A9-Ps2-1A9-PS2-2A9-PS3-1A9-PS3-2ASPI-PS2-1ASPI-PS2-2ASPI-PS2-6ASPI-ETS1-2 | A9-Ps2-3A9-PS2-5ASPI-PS3-1ASPI-PS3-2ASPI-PS3-3ASPI-PS3-4ASPI-ESS1-5ASPI-ETS1-3 |
| Foundational Skills | * Critical thinking
* Basic Algebra Skills
* Making Claims, Providing Evidence
* Provide reasoning
* Lab skills
* Design an experiment
* Using lab and lab equipment correctly
* Creating a data table
* Creating a graph from data table
* Calculate Protons, Electrons and neutrons
* Scientific Method
* Basic Knowledge of Metric System
* Periodic Table of Elements
* Periods & Groups
* Classification of Elements
* Metals, Non- metals, Metalloids, Transitions Metals
 | * Counting atoms
* Atomic theory
* Types of Formulas
* Metric conversions
* Drawing Lewis Dot Structures
* Writing Ionic Formulas
* Writing Formulas and Polyatomic Formulas
* Naming Ionic Formulas
* Naming Molecular Compounds
* Naming Acids
* Atomic Models
* Electron Cloud Model
* Chemical Bond
* Electron Shell Configuration
* Aufbau Principle
* Hund’s rule
* The Octet Rule
 | * Metric Measurements
* Newton’s  1st Law
* Newton’s  2nd Law
* Newton’s  3 rd Law
* Law of Conservation of Momentum
* Gravity
* G-Forces
* Momentium
* Calculating Force
* Vector analysis
* Calculating work
* Acceleration
* Speed
* motion
 | * Simple Machines
* Mechanical Advantage
* Power
* Electricity
* Magnetism
* Waves
* Electric Current
* Static Electric Charges
* Electric charges
* Ohm's Law
* Types of Circuits
* Fues
* Magnetism from Electricity
* Transformers
 |
| Key Strategies or Action Words | * Questioning
* Observations
* Qualitative observation
* Quantitative observation
* Infer
* Prediction
* Independent Variable
* Dependent Variable
* Variable
* Hypothesis
* Demonstrate
* Control Variable
* Evaluate
* Unsafe Lab Practices
* Elements
* Compounds

 | * Organic
* Inorganic
* chemical Formula
* Empirical Formula
* Molecular Formula
* Ionic
* covalent
* Polyatomic Ion
* Oxidation Number
* Di-atomic Molecule
* Electron Dot Diagram
* Atomic Number
* Isotopes
* Mass Number
* Average Atomic Mass
 | * Metric Measurements
* Newton’s  1st Law
* Newton’s  2nd Law
* Newton’s  3 rd Law
* Law of Conservation of Momentum
* Distance Formula
* Velocity Formula
* Time
* Force
* Work
* Energy
* Transformation
* Speed
* Acceleration

  | * Electricity
* Electric Current
* Electric Charges
* Friction
* Static Charges
* Magnetism
* Magnetic Poles
* Ohms
* Static Electricity
* Conduction
* Induction
* Electrical Conductor
* Electrical insulators
* Voltage
* Resistance
* Power
* Current
* Electrical Power
* Energy Source
* Load
* Series Circuit
* Parallel Circuit
* Soleniod
 |
| Assessments of Power Standards:Formative and Summative | QuizzesEnd of topic or Unit ExamACT Aspire | QuizzesEnd of topic or Unit ExamACT Aspire | QuizzesEnd of Topic or Unit ExamACT Aspire | QuizzesEnd of topic or Unit ExamACT Aspire |

Pottsville School District 9th Grade Pre-AP Biology “Year at a Glance”

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| --- | --- | --- | --- | --- |
|  | Chapter or Unit(s): **Intro to Science, Safety, Skills; Biochemistry; DNA** | Chapter or Unit(s): **Cells; Systems Feedback** | Chapter or Unit(s): **Cycling of Matter and Energy; Cell Reproduction;** **Protein Synthesis** | Chapter or Unit(s): **Mendel & Meiosis,** **Evolution by Natural Selection** |
|  | Target Dates: **1st Quarter** | Target Dates: **2nd Quarter** | Target Dates: **3rd Quarter** | Target Dates: 4th Quarter |
| Standards | **ABI-LS1-1****ABI-LS1-2** **ABI-LS1-3****ABI-LS1-6** | **ABI-LS12-3AR****ABI-LS1-2****ABI-LS1-3** |

|  |  |
| --- | --- |
| **ABI-LS1-5****ABI-LS1-7****ABI-LS2-3****ABI-LS2-4** | **ABI-LS2-5****ABI-ESS2-6****ABI-LS1-4****ABI-LS3-1** |

 |

|  |  |
| --- | --- |
| **ABI-LS3-2****ABI-LS3-3****ABI-LS4-1****ABI-LS4-2****ABI-LS4-3** | **ABI-LS4-4****ABI-LS4-5****ABI-LS4-7AR****ABI-LS4-8AR****ABI-ESS2-7** |

 |
| Foundational Skills | * Critical thinking
* Know common element symbols and names
* Calculate protons, neutrons, electrons for an atom
* Know formulas for common compounds
* Know the 4 nucleotides for DNA
 | * Familiar with Cell Theory
* Compare/contrast prokaryotes & eukaryotes
* Describe functions of cell organelles
* Describe the hierarchy of the structure of multicellular organisms
* Familiarity with most of the internal organs of humans
 | * Know how to use a Punnett square
 | * Know how to use a Punnett square
* Understand the basics of mitosis and meiosis
 |
| Key Strategies or Action Words | * Polar Bear Dilemma
* Cube Activities
* Canister Conundrum
* Skittles Lab
* Green Beans The Wonderful Fruit
* Leaf Drawings
* Water Properties POGIL (Process Oriented Guided Inquiry Learning)
* Biological Molecules POGIL
* Water Properties Lab
* Liver Peroxide Lab
* DNA Extraction Lab
* DNA Model
 | * Osmosis and Diffusion Lab
* Potato Osmosis Lab
* Cell Size POGIL
* Membrane Structure & Function POGIL
* Bozeman Videos
* Balancing Act – hormone feedback models
* Feedback Systems POGIL
* Howard Hughes Medical Institute video – Cells of the immune system
* Making Sense of It All – Nervous System and Senses lab
 | * Yeast & Molasses Lab
* Lights Out Lab
* Climate & Earth’s Systems (HHMI)
* Plants & Energy CER Lab
* Chromosome Manipulative Lab
* Mitosis Flip Book
* Protein Synthesis Activity
* DNA Profiling
 | * Case Studies
* Karyotype Curiosities
* Calculate probabilities in genetic crosses
* Quackers and Cottontails Lab
* Hardy Har Har – Hardy-Weinberg Investigation
* HHMI: The Day The Mesozoic Died
* Tree of Life Lab
 |
| Assessments of Power Standards:Formative and Summative | * Multiple content-based low-stakes quizzes
* Quizzes over reading
* Labs
* DNA Model
* POGILS
* Exams
* Observation/Questioning
 | * Multiple content-based low-stakes quizzes
* Quizzes over reading
* Labs
* POGILS
* Exams
* Observation/Questioning
* Interim
 | * Multiple content-based low-stakes quizzes
* Quizzes over reading
* Labs
* Mitosis Flip Book
* POGILS
* Exams
* Observation/Questioning
* Interim
 | * Multiple content-based low-stakes quizzes
* Quizzes over reading
* Labs
* POGILS
* Exams
* Observation/Questioning
 |

Pottsville School District -**Anatomy** “Year at a Glance”

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| --- | --- | --- | --- | --- |
|  | Unit(s): **Terminology, Biochemistry, Cells, Tissues, Integumentary System** | Unit(s): **Skeletal, Muscular and Nervous Systems**  | Unit(s): **Endocrine, Respiratory and Cardiovascular Systems** | Unit(s): **Digestion, Lymphatic, Urinary and Reproductive Systems** |
|  | Target Dates: **1st 9 weeks** | Target Dates: **2nd 9 weeks** | Target Dates: **3rd 9 weeks** | Target Dates: **4th 9 weeks** |
| Standards | HAP-LS1-1AR HAP-LS2-1AR HAP-LS3-1AR HAP-LS4-1AR HAP-LS5-1AR HAP-LS6-1AR HAP-LS7-HAP-8-1AR HAP-8-2AR HAP-8-3AR  | HAP-LS1-1AR HAP-LS2-1AR HAP-LS3-1AR HAP-LS4-1AR HAP-LS5-1AR HAP-LS6-1AR HAP-LS7-HAP-8-1AR HAP-8-2AR HAP-8-3AR  | HAP-LS1-1AR HAP-LS2-1AR HAP-LS3-1AR HAP-LS4-1AR HAP-LS5-1AR HAP-LS6-1AR HAP-LS7-HAP-8-1AR HAP-8-2AR HAP-8-3AR  | HAP-LS1-1AR HAP-LS2-1AR HAP-LS3-1AR HAP-LS4-1AR HAP-LS5-1AR HAP-LS6-1AR HAP-LS7-HAP-8-1AR HAP-8-2AR HAP-8-3AR  |
| Foundational Skills | Technical WritingCERsMeasurement and Graphing Skills Design  and Safely carry out a Lab | Technical WritingCERsMeasurement and Graphing Skills Design  and Safely carry out a Lab | Technical WritingCERsMeasurement and Graphing Skills Design  and Safely carry out a Lab | Technical WritingCERsMeasurement and Graphing Skills Design  and Safely carry out a Lab |
| Key Strategies or Action Words | ModelingHands on ActivitiesDesign and Carry out Science LabsSupport with Evidence | ModelingHands on ActivitiesDesign and Carry out Science LabsSupport with Evidence | ModelingHands on ActivitiesDesign and Carry out Science LabsSupport with Evidence | ModelingHands on ActivitiesDesign and Carry out Science LabsSupport with Evidence |
| Assessments of Power Standards:Formative and Summative | Unit TestModels and ProjectsQuizzesBell Ringers/Exit SlipsHomeworkLab Reports/CERs | Unit TestModels and ProjectsQuizzesBell Ringers/Exit SlipsHomeworkLab Reports/CERs | Unit TestModels and ProjectsQuizzesBell Ringers/Exit SlipsHomeworkLab Reports/CERs | Unit TestModels and ProjectsQuizzesBell Ringers/Exit SlipsHomeworkLab Reports/CERs |

Pottsville School District –**Environmental Science** “Year at a Glance”

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| --- | --- | --- | --- | --- |
|  | Unit(s): **Introduction to Environmental Science & Systems (Earth Systems, Process of Science, Economics and Policies)** | Unit(s): **Ecology (Biodiversity, Biomes, Populations, Ecosystems, Succession, Invasive Species)**  | Unit(s): **Humans and the Environment (Pollution, Practices, Population, Waste, Environmental Health, Climate change)** | Unit(s):E**arth’s Resources and Sustainability (Energy, Environmental Health, Human Impact and Solutions)**  |
|  | Target Dates: **1st 9 weeks** | Target Dates: **2nd 9 weeks** | Target Dates: **3rd 9 weeks** | Target Dates: **4th 9 weeks** |
| Standards |  AR EVS-ESS2-2AR EVS-ESS2-3AR EVS-ESS2-5AR EVS-ESS2-6AR EVS-ESS3-5AR EVS1-ETS1-1 | AR EVS-LS2-1AR EVS-LS2-2AR EVS-LS2-6AR EVS-LS2-8AR EVS3-ETS1-3 | AR EVS-PS3-1AR EVS-PS3-2AR EVS-PS3-3AR EVS-PS3-4AR EVS-ESS2-4AR EVS2-ETS-1AR EVS-ESS3-1AR EVS-ESS3-2 | AR EVS-PS3-1AR EVS-PS3-2AR EVS-PS3-3AR EVS-PS3-4AR EVS-ESS2-4AR EVS2-ETS1-2 AR EVS-ESS3-3AR EVS-ESS3-4AR EVS-ESS3-6 AR EVS-LS2-7AR EVS-LS4-6AR EVS4-ETS1-3 |
| Foundational Skills | Classification skillsObservational skillsMath proficiencyGraphingLab Safety | Classification skillsObservational skillsCorrect use of situational mathRoot Word meaningLab Safety | Classification skillsObservational skillsInterpreting numbersRoot Word meaningLab Safety | Classification skillsObservational skillsInterpreting and using numbersRoot Word meaning and usageLab Safety |
| Key Strategies or Action Words | ModelingScience DemonstrationsScientific Methods PracticeScience LabsSupport with EvidenceDiagramming, drawings, graphingClaims, Evidence, and Reasoning | ModelingTechnical ReadingTechnical WritingHands on ActivitiesScience LabsSupport with EvidenceDiagramming, drawings, graphingClaims, Evidence, and Reasoning | ModelingInterpretation of Data SetsHands on ActivitiesScience LabsSupport with EvidenceDiagramming, drawings, graphingClaims, Evidence, and Reasoning | ModelingReflection of LearningDemonstration of Science MethodsHands on ActivitiesScience LabsSupport with EvidenceDiagramming, drawings, graphing |
| Assessments of Power Standards:Formative and Summative | Unit TestFormative QuizzesMath Test (Measurements)Lab Reports/CERs | Unit TestModels and ProjectsFormative QuizzesSummative Vocabulary Test ILab Reports/CERs | Unit TestModels and ProjectsFormative QuizzesBook ReportsEssaysLab Reports/CERs | Unit TestModels and ProjectsFormative QuizzesSummative Vocabulary Test IIIndependent Projects (Summative) |

Pottsville School District Physics “Year at a Glance”

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Chapter or Unit(s) | Chapter or Unit(s) | Chapter or Unit(s) | Chapter or Unit(s) |
|  | Target Dates: 1st Quarter | Target Dates: 2nd Quarter | Target Dates: 3rd Quarter | Target Dates: 4th Quarter |
| Standards | P-PS1-1ARP-PS1-2ARAR P-PS2-1AR P-PS2-2AR P-ESS1-2AR P-ESS1-4AR P1-ETS1-2 | P-PS2-1ARP-PS2-2ARP-PS2-3ARP-PS2-4ARP-PS2-5ARP-PS2-6ARAR P2-ETS1-3AR P-PS2-4AR P-PS2-5 | AR P-PS3-1P-PS3-1ARP-PS3-2ARP-PS3-3ARAR P-PS3-3AR P-PS3-4AR P3-ETS1-1AR P3-ETS1-2AR P3-ETS1-3AR P3-ETS1-4 | P-PS4-1ARP-PS4-2ARP-PS4-3ARAR P4-ETS1-4 |
| Foundational Skills | Classification skillsObservational skillsAlgebra and Trigonometry proficiencyDraw system cyclesRecognition of word rootsTechnical Writing/DrawingLab Safety | Research skillsUse of modelsGraphing and data organizationAlgebra and Trigonometry proficiencyRead on grade levelTechnical Writing/DrawingCERsLab Safety | Use units of measurementRecognize SI unitsInterpret abstract ideasTechnical Writing/DrawingCERsLab SafetyAlgebra and Trigonometry proficiency | Draw to scaleTechnical WritingCERsLab SafetyDevelop argumentsTechnical Writing/DrawingAlgebra and Trigonometry proficiency |
| Key Strategies or Action Words | ModelingHands on ActivitiesScience LabsSupport with EvidenceMappingExtrapolate dataCERs | ModelingHands on ActivitiesScience LabsSupport with EvidenceCERs | ModelingHands on ActivitiesScience LabsSupport with EvidenceCERs | ModelingHands on ActivitiesScience LabsSupport with EvidenceCERs |
| Assessments of Power Standards:Formative and Summative | Math TestUnit TestDemonstration | Math TestUnit TestDemonstration | Math TestUnit TestDemonstration | Math TestUnit TestDemonstration |

Pottsville School District “Year at a Glance” Astronomy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Chapter or Unit(s): Astronomy Science Systems, Measurements, and Orbital Mechanics,  | Chapter or Unit(s): Planetary Systems, Solar Science, and the Moon | Chapter or Unit(s): Extra-Solar System, Constellations, and Greek Mythology | Chapter or Unit(s): Aerospace Engineering and Design |
|  | Target Dates: First Quarter | Target Dates: Second Quarter | Target Dates: Third Quarter | Target Dates: Fourth Quarter |
| Standards | A-ESS1-1ARA1-ESS1-2ARAR A1-ETS1-2AR A-ESS1-4A-ESS3-1ARA-ESS3-2AR AR A3-ETS1-1 | A-ESS2-1ARA-ESS2-2ARAR A-ESS1-6A-ESS4-1ARA-ESS4-2ARAR A6-ESS1-1A-ESS6-1ARAR A6-ETS1-1 | AR A6-ESS1-1A-ESS6-1ARAR A6-ETS1-1AR A5-ESS1-1A-ESS5-1ARA-ESS5-2AR | AR A7-ESS1-1AR A-ESS1-3A-ESS7-1ARAR A8-ESS1-2A-ESS8-1ARAR A8-ETS1-3 |
| Prerequisite skills(prior knowledge, skills needed for student to master the standard) | Classification skillsObservational skillsAlgebra usageRecognition of word rootsLab Safety | Research skillsUse of modelsGraphing and data organizationAlgebra and Trigonometry proficiencyRead on grade levelTechnical WritingLab Safety | Use units of measurementUse SI unitsInterpret abstract ideasTechnical Reading & WritingLab SafetyAlgebra and Trigonometry proficiency | Draw to scaleTechnical WritingLab SafetyDevelop argumentsDraw system cyclesAlgebra and Trigonometry proficiency |
| Key Strategies or Action Words | ModelingHands on ActivitiesScience LabsSupport with EvidenceMappingExtrapolate data | ModelingHands on ActivitiesScience LabsSupport with EvidencePlanetary motion analysis | ModelingHands on ActivitiesScience LabsSupport with EvidenceDetermine light yearsGreek Mythology | ModelingHands on ActivitiesScience LabsSupport with EvidenceUse the Hubble ConstantEngineering Practice |
| Assessments of Power Standards:Formative and Summative | Unit TestFormative QuizzesMath Test (Measurements)Lab Reports/CERs | Unit TestModels and ProjectsFormative QuizzesSummative Vocabulary Test ILab Reports/CERs | Unit TestModels and ProjectsFormative QuizzesBook ReportsEssaysLab Reports/CERs | Unit TestModels and ProjectsFormative QuizzesSummative Vocabulary Test IIIndependent Projects (Summative) |