

IAA Curriculum

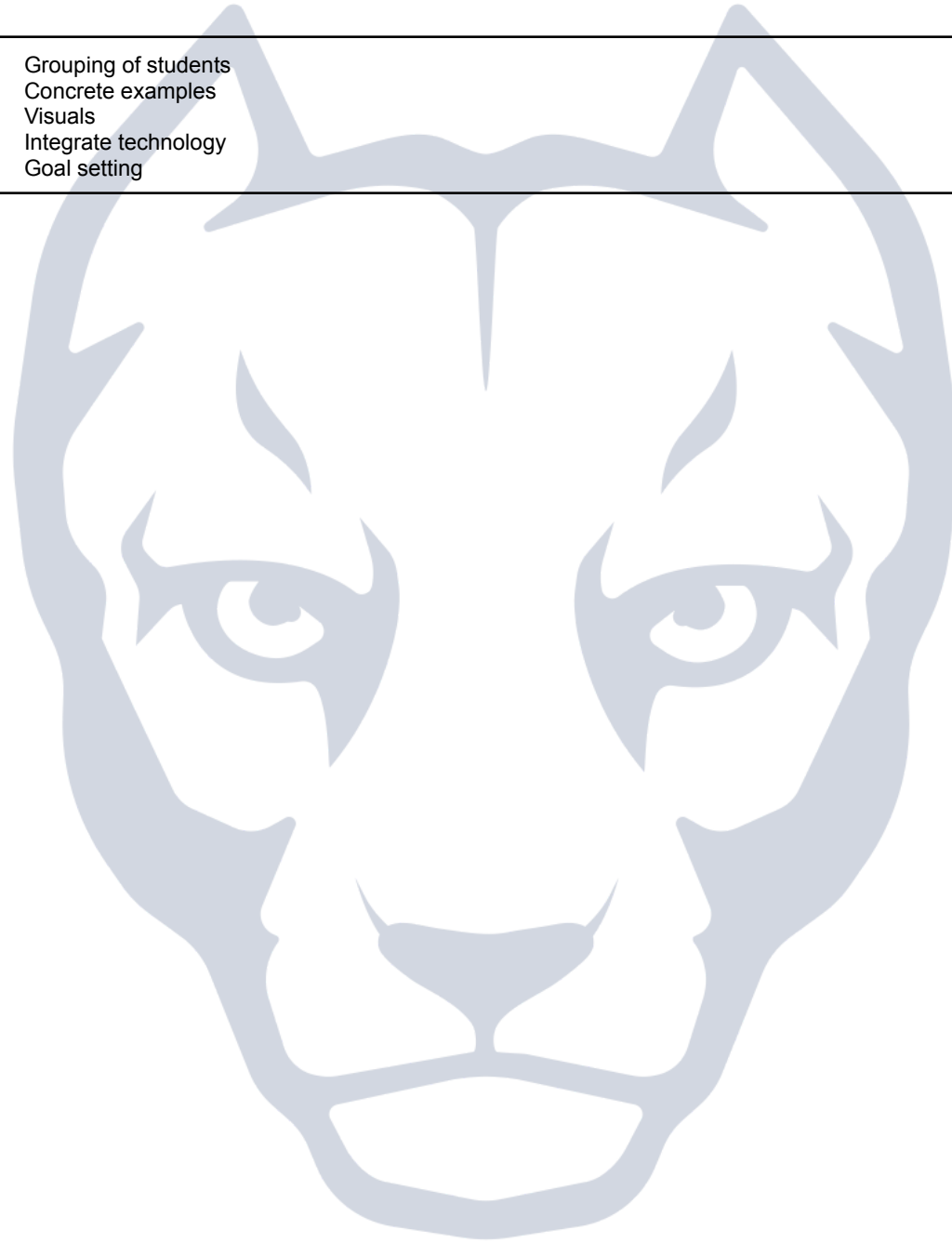
Content Area	Science	Grade	7
Course Name	Earth Science		

Unit	Unit 1: Earth's Resources					
Big Ideas	<ul style="list-style-type: none"> • Resource use and population growth • Resource formation and distribution • Geological time and Earth's history • The human population has continued to grow • Every person on Earth uses food, water, and other natural resources • Renewable resources are recycled or replenished quickly • Nonrenewable resources formed millions of years ago • Many geological events have occurred during the existence of Earth • A wide variety of life forms have appeared, evolved, and become extinct 					
Key Learning Objectives & Skills	<ul style="list-style-type: none"> • Analyze data from labs • Model earth's resources • Model effects of earth's resources • Analyze models • Identify functions • Identify key vocabulary • Formulate answers to analysis questions • Formulate predictions of effects of earth's resources • Graph availability of nonrenewable resources • Analyze the differences between renewable and nonrenewable resources 					
Essential Questions	<p>Statements summarizing important ideas and core processes that are central to the unit or concept and have lasting value beyond the classroom.</p> <ul style="list-style-type: none"> • What are natural resources? • How has an increase in human population affected resource consumption? • What makes one mineral resource different from another? • How are natural resources used globally? • How are underground deposits of natural resources located? • How are resources extracted from the earth? • How are natural resources formed? • How does groundwater form, and how is it extracted? • Which rock layers are the oldest? • When did particular events in Earth's history occur? • How are rock strata and fossils used to sequence Earth's history? • How is a growing human population and increasing resource consumption impacting the earth? 					
Dates	Smart	Instructional Strategies	PA CC	Keystone or	Keystone /	Vocabulary

(estimates only)	Objectives	and Activities	Standards	PSSA Anchors	PSSA Eligible Content	
(6 weeks)	<p>What do students have to do related to the content?</p> <p>Resource use and population growth</p> <ul style="list-style-type: none"> Graph the availability of various resources Analyze created graphs and draw conclusions from them Compare and contrast renewable and nonrenewable resources Evaluate the growth of the human population <p>Resource formation and distribution</p> <ul style="list-style-type: none"> Compare how renewable and nonrenewable resources are formed Conduct mathematical calculations to compare how long it take for renewable and nonrenewable resources are formed Analyze the usage of Earth materials by humans Identify renewable resources and nonrenewable resources <p>Geological time and Earth's history</p> <ul style="list-style-type: none"> Identify important geological events Analyze the importance of geological events in Earth's history <p>The human population has continued to grow</p> <ul style="list-style-type: none"> Graph the growth of the human population in excel 	<p>Used to develop the skills and knowledge</p> <p>Resource use and population growth</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities <p>Resource formation and distribution</p> <p>Lab based learning</p> <ul style="list-style-type: none"> Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities <p>Geological time and Earth's history</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities <p>The human population has continued to grow</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills 	<p>3.3.7.A6 3.3.7.A5 3.3.7.A4 3.3.7.A3 CC.3.5.6-8.A. CC.3.5.6-8.C. CC.3.5.6-8.G. CC.3.5.6-8.I CC.3.6.6-8.A. CC.3.6.6-8.D. CC.3.6.6-8.F. CC.3.6.6-8.H. CC.3.6.6-8.J.I.</p>	<p>S.7.A.1.1 S.7.A.1.3 S.7.A.2.1 S.7.B.3.3 S.7.C.1.1</p>	<p>S.7.A.1.1.1 S.7.A.1.1.2 S.7.A.1.3.2 S.7.A.2.1.1 S.7.A.2.1.2 S.7.B.3.3.1 S.7.B.3.3.2 S.7.C.1.1.4</p>	<p>What is the essential vocabulary of the unit or concept?</p> <p>Consumption Evidence Geological Processes Geological time Groundwater Mineral Resources Nonrenewable/Renewable Per capita Petroleum Population Trade-offs</p>

	<ul style="list-style-type: none"> • Research the effects of the continued human population growth • Formulate a research paper citing evidence of the effects of human population growth • Evaluate how life has evolved, appeared, and become extinct over time 	<ul style="list-style-type: none"> • Answering analysis questions based on lab activities 				
Resources	Materials, texts, videos, internet sites, software, human to support instruction <ul style="list-style-type: none"> • SEPUP-Lab aids textbook <ul style="list-style-type: none"> ○ Lab activities ○ Videos • Materials to model content 					
Formative Assessments	What evidence (product and/or performance) will be collected to establish that content and skills are being learned? <ul style="list-style-type: none"> • Exit tickets • Lab reports • Models • Quiz • Do now • Discussion • Stations • Oral questioning • Independent practice 					
Summative Assessments	What evidence (produce and/or performance) will be collected to determine that content and skills have been learned? <ul style="list-style-type: none"> • Unit Test • Project 					
Strategies for ELL and IEP Support	What tools, strategies, and resources will be used to provide accommodations and modifications to support students? <ul style="list-style-type: none"> • Productive pacing • Incorporate native languages • Use visuals • Small group teaching • Provide different levels of materials • Simplify language • Repetition • Provide content in multiple forms 					
Acceleration Strategies	What tools, strategies, and resources will be used to help advance students closer to grade-level expectations <ul style="list-style-type: none"> • Scaffolding of material • Collaboration with others 					

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|--|--|
| | <ul style="list-style-type: none">● Grouping of students● Concrete examples● Visuals● Integrate technology● Goal setting |
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IAA Curriculum

Content Area	Science	Grade	7
Course Name	Earth Science		

Unit 2/ Concepts	Unit 2: Weather and Climate
Big Ideas	<ul style="list-style-type: none"> ● Weather ● Climate ● Solar Energy ● Wind ● Water ● Global Climate Change ● Weather is the condition of the atmosphere near Earth's surface for a specific location at a specific time ● Climate describes the average atmospheric conditions that are typical for a specific location over a longer period of time ● Energy from the sun is the driving force behind Earth's weather and climate ● Wind helps distribute thermal energy and water throughout the atmosphere ● Water helps distribute thermal energy throughout the oceans and atmosphere ● The climate of an area can change over time ● Earth's climate conditions have not always been the same as they are today
Key Learning Objectives & Skills	<ul style="list-style-type: none"> ● Analyze data from labs ● Model content ● Analyze models ● Identify functions ● Identify key vocabulary ● Formulate answers to analysis questions ● Formulate predictions ● Graph patterns ● Map sections of the world ● Identify locations on earth
Essential Understandings	<p>Statements summarizing important ideas and core processes that are central to the unit or concept and have lasting value beyond the classroom.</p> <ul style="list-style-type: none"> ● What is climate change, and how does it affect us? ● How are daily weather data different from seasonal weather data? ● How have severe weather events affected your region? ● Does the distribution of climates show any regional or global patterns? ● What percentage of Earth's surface is covered by water? ● How do different surfaces on Earth gain and lose thermal energy? ● How do ocean temperatures vary over Earth's surface? ● How does water behave when it mixes? ● How do oceans affect climate? ● Why do different parts of the world have different climates?

	<ul style="list-style-type: none"> • What is the pattern of Earth's prevailing winds? • How can weather maps be used to forecast weather? • What role does the atmosphere play in weather and climate? • Has Earth's atmosphere always been the same as it is today? 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
(2 weeks)	<p>What do students have to do related to the content?</p> <p>Weather</p> <ul style="list-style-type: none"> • Identify weather • Observe changes in weather over a 7 day period • Relate the weather in one location to another • Identify the technology used to record and observe weather patterns and conditions <p>Climate</p> <ul style="list-style-type: none"> • Identify climate • Compare and contrast weather and climate in different locations on Earth • Evaluate what affects Earth's weather and climate • Discover that climate can change over time • Analyze climate changes over time <p>Solar Energy</p> <ul style="list-style-type: none"> • Analyze how wind and water affect the climates on Earth • Identify technology used for solar energy • Compare the benefits and deficiencies in using solar energy <p>Wind</p> <ul style="list-style-type: none"> • Analyze how wind and water affect the climates on Earth 	<p>Used to develop the skills and knowledge</p> <p>Weather</p> <ul style="list-style-type: none"> • Lab based learning • Modeling systems • Reading scientific procedures • Keeping a science notebook • Constructing a concept map • Developing communication skills • Answering analysis questions based on lab activities • Observe weather patterns and document data • Graph weather patterns <p>Climate</p> <ul style="list-style-type: none"> • Lab based learning • Modeling systems • Reading scientific procedures • Keeping a science notebook • Constructing a concept map • Developing communication skills • Answering analysis questions based on lab activities • Map climate patterns on earth <p>Solar Energy</p> <ul style="list-style-type: none"> • Lab based learning • Modeling systems • Reading scientific procedures • Keeping a science notebook • Constructing a concept map • Developing communication skills • Answering analysis questions based on lab activities 	<p>3.3.7.A4</p> <p>3.3.7.A5</p> <p>3.3.7.A6</p> <p>3.3.7.A7</p> <p>CC.3.5.6-8.A.</p> <p>CC.3.5.6-8.C.</p> <p>CC.3.5.6-8.G.</p> <p>CC.3.5.6-8.I</p> <p>CC.3.6.6-8.A.</p> <p>CC.3.6.6-8.D.</p> <p>CC.3.6.6-8.F.</p> <p>CC.3.6.6-8.H.</p> <p>CC.3.6.6-8.J.I.</p>	<p>S.7.A.1.1</p> <p>S.7.A.1.3</p> <p>S.7.A.2.1</p> <p>S.7.D.2.1</p> <p>S.7.D.1.2</p> <p>S.7.D.1.1</p>	<p>S.7.A.1.1.1</p> <p>S.7.A.1.1.2</p> <p>S.7.A.1.3.2</p> <p>S.7.A.2.1.1</p> <p>S.7.A.2.1.2</p> <p>S.7.D.2.1.1</p> <p>S.7.D.2.1.2</p> <p>S.7.D.1.2.1</p> <p>S.7.D.1.2.2</p> <p>S.7.D.1.2.3</p> <p>S.7.D.1.1.2</p>	<p>What is the essential vocabulary of the unit or concept?</p> <p>Anemometer</p> <p>Atmosphere</p> <p>Casual relationship</p> <p>Climate</p> <p>Climate change</p> <p>Coriolis effect</p> <p>Current</p> <p>Global warming</p> <p>Latitude</p> <p>Meteorologist</p> <p>Precipitation</p> <p>Prevailing wind</p> <p>Weather</p> <p>Weather forecast</p> <p>Wind</p>

	<ul style="list-style-type: none"> • Compare the benefits and deficiencies in using solar energy • Observe how wind affects different weather and climate events <p>Water</p> <ul style="list-style-type: none"> • Analyze how wind and water affect the climates on Earth • Identify climate changes that have occurred on Earth over time • Compare the benefits and deficiencies in using solar energy • Analyze how water affects different weather and climate events 	<ul style="list-style-type: none"> • Observe technology that uses solar energy • Create technology models <p>Wind</p> <ul style="list-style-type: none"> • Lab based learning • Modeling systems • Reading scientific procedures • Keeping a science notebook • Constructing a concept map • Developing communication skills • Answering analysis questions based on lab activities • Observe technology that uses wind energy • Create technology models <p>Water</p> <ul style="list-style-type: none"> • Lab based learning • Modeling systems • Reading scientific procedures • Keeping a science notebook • Constructing a concept map • Developing communication skills • Answering analysis questions based on lab activities • Observe technology that uses water energy • Create technology models 				
<p>Resources</p>	<p>Materials, texts, videos, internet sites, software, human to support instruction</p> <ul style="list-style-type: none"> • SEPUP-Lab aids textbook <ul style="list-style-type: none"> ◦ Lab activities ◦ Videos • Materials to model content 					
<p>Formative Assessments</p>	<p>What evidence (product and/or performance) will be collected to establish that content and skills are being learned?</p> <ul style="list-style-type: none"> • Exit tickets • Lab reports • Models • Quiz • Do now • Discussion • Stations • Oral questioning 					

	<ul style="list-style-type: none"> • Independent practice
Summative Assessments	<p>What evidence (produce and/or performance) will be collected to determine that content and skills have been learned?</p> <ul style="list-style-type: none"> • Unit Test • Project
Strategies for ELL and IEP Support	<p>What tools, strategies, and resources will be used to provide accommodations and modifications to support students?</p> <ul style="list-style-type: none"> • Productive pacing • Incorporate native languages • Use visuals • Small group teaching • Provide different levels of materials • Simplify language • Repetition • Provide content in multiple forms
Acceleration Strategies	<p>What tools, strategies, and resources will be used to help advance students closer to grade-level expectations</p> <ul style="list-style-type: none"> • Scaffolding of material • Collaboration with others • Grouping of students • Concrete examples • Visuals • Integrate technology • Goal setting

Content Area	Science	Grade	7th Grade
Course Name	Earth Science		

Unit 3/ Concepts	Unit 3: Geological Processes
Big Ideas	<ul style="list-style-type: none"> ● Changes to Earth's surface ● Natural hazards ● Plate tectonics ● Rocks and the rock cycle ● Distribution of Earth's natural resources ● Geological processes cause changes to Earth's surface ● Many geological processes cause natural hazards ● Volcanic activity and earthquakes happen in global patterns ● Scientists use equipment to monitor areas where natural hazards happen often ● Earth's lithospheric plates have moved over geological time, changing the appearance of Earth's surface ● Rocks can become other types of rock through geological processes, some of which are related to plate motion ● Many natural resources that humans rely on form through geological processes that take place over geological time ● Geological processes that form and replenish natural resources do not happen evenly across Earth's surface
Key Learning Objectives & Skills	<ul style="list-style-type: none"> ● Analyze data from labs ● Model systems and cycles ● Analyze models ● Identify functions ● Identify key vocabulary ● Formulate answers to analysis questions ● Formulate predictions ● Formulate a 3 paragraph paper ● Graph data
Essential Questions	<p>Statements summarizing important ideas and core processes that are central to the unit or concept and have lasting value beyond the classroom.</p> <ul style="list-style-type: none"> ● What factors must be considered when deciding where to store nuclear waste? ● How does water interact with earth materials? ● How can a natural hazard create challenges for storing nuclear waste? ● What natural hazards are caused by earthquakes and volcanic eruptions?

	<ul style="list-style-type: none"> How can models help us understand what happens during a volcanic eruption? What patterns can we see when examining the locations of earthquakes and volcanoes? How can GPS data help us understand Earth's surface? What is beneath Earth's surface? What happens when Earth's plates meet? How can our understanding of geological processes at plate boundaries allow us to predict and prepare for natural hazards? What evidence can we use to help us understand the movement of Earth's plates over time? How did Wegener's idea of continental drift lead to the theory of plate tectonics? What drives plate motion? How do rocks form? How do geological processes affect where we find rock and mineral resources? How can monitoring natural resources help guide decisions about their use? 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
(5 weeks)	<p>What do students have to do related to the content?</p> <p>Changes to Earth's surface</p> <ul style="list-style-type: none"> Identify geological processes that caused changes to Earth's surface Evaluate how earth's surface has changed over time and the events that have caused it to change Draw different changes to earth's surface over time Develop theories as to why the earth's surface has changed over time <p>Natural hazards</p> <ul style="list-style-type: none"> Analyze how geological processes cause natural hazards Identify 3 causes of natural hazards Make observations of the effects of natural hazards Create a plan to respond to one natural hazard <p>Plate tectonics</p> <ul style="list-style-type: none"> Identify the patterns in which volcanic activity and 	<p>Used to develop the skills and knowledge</p> <p>Changes to Earth's surface</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Draw changes of the surface Draw conclusions about causes of changes Discuss in groups about changes observed <p>Natural hazards</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Analyze the responses to 	<p>3.3.7.A2 3.3.7.A1 3.2.7.B7 3.2.7.B6 3.3.7.A3 3.3.7.A6 CC.3.5.6-8.A. CC.3.5.6-8.C. CC.3.5.6-8.G. CC.3.5.6-8.I CC.3.6.6-8.A. CC.3.6.6-8.D. CC.3.6.6-8.F. CC.3.6.6-8.H. CC.3.6.6-8.J.I.</p>	<p>S.7.A.1.1 S.7.A.1.3 S.7.A.2.1 S.7.D.2.1 S.7.D.1.2 S.7.D.1.1</p>	<p>S.7.A.1.1.1 S.7.A.1.1.2 S.7.A.1.3.2 S.7.A.2.1.1 S.7.A.2.1.2 S.7.D.2.1.1 S.7.D.2.1.2 S.7.D.1.2.1 S.7.D.1.2.2 S.7.D.1.2.3 S.7.D.1.1.2</p>	<p>What is the essential vocabulary of the unit or concept?</p> <p>Earthquake Geological time Lithospheric plate Mid-ocean ridge Natural hazards Natural resource Plate boundary Plate tectonics Rock cycle Trench Volcano</p>

	<p>earthquakes happen</p> <ul style="list-style-type: none"> Identify the equipment used by scientists to monitor areas where natural hazards happen often Identify plate tectonics Identify what causes plates to move over time <p>Rocks and the rock cycle</p> <ul style="list-style-type: none"> Identify the components of the rock cycle Assess the reasons for the changes that occur in the rock cycle Make observations of rocks in different phases of the rock cycle <p>Distribution of Earth's natural resources</p> <ul style="list-style-type: none"> Analyze how natural resources are formed and how humans use them Evaluate the locations of geological processes that form natural resources on Earth's surface 	<p>natural hazards</p> <ul style="list-style-type: none"> Make observations of various natural hazards Research past natural hazards <p>Plate tectonics</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Model plate tectonic movement <p>Rocks and the rock cycle</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Make a model of the rock cycle with components labeled <p>Distribution of Earth's natural resources</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Group activity of unevenly distributing resources Debate on human usage of natural resources 				
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Resources	<p>Materials, texts, videos, internet sites, software, human to support instruction</p> <ul style="list-style-type: none"> ● SEPUP-Lab aids textbook <ul style="list-style-type: none"> ○ Lab activities ○ Videos ● Materials to model content
Formative Assessments	<p>What evidence (product and/or performance) will be collected to establish that content and skills are being learned?</p> <ul style="list-style-type: none"> ● Exit tickets ● Lab reports ● Models ● Quiz ● Do now ● Discussion ● Stations ● Oral questioning ● Independent practice
Summative Assessments	<p>What evidence (product and/or performance) will be collected to determine that content and skills have been learned?</p> <ul style="list-style-type: none"> ● Unit Test ● Project
Strategies for ELL and IEP Support	<p>What tools, strategies, and resources will be used to provide accommodations and modifications to support students?</p> <ul style="list-style-type: none"> ● Productive pacing ● Incorporate native languages ● Use visuals ● Small group teaching ● Provide different levels of materials ● Simplify language ● Repetition ● Provide content in multiple forms
Acceleration Strategies	<p>What tools, strategies, and resources will be used to help advance students closer to grade-level expectations</p> <ul style="list-style-type: none"> ● Scaffolding of material ● Collaboration with others ● Grouping of students ● Concrete examples ● Visuals ● Integrate technology ● Goal setting

IAA Curriculum

Content Area	Science	Grade	7th Grade
Course Name	Earth Science		

Unit 4/ Concepts	Unit 4: Evolution					
Big Ideas	<ul style="list-style-type: none"> • Evolution by natural selection • Speciation and extinction • Evidence for evolution • Humans and evolution • Individual organisms typically exhibit a variety of traits • Natural selection leads to changes in populations, which can lead to the evolution of new species • The geologic time reflects the vast time scale since Earth originated approximately 4.5 billion years ago • Humans have mutual cause-and-effect evolutionary relationships with other organisms • People have intentionally affected species, including many domestic animals and crops, through selective breeding and genetic engineering • While there are millions of species on Earth today, billions of species have existed in the past but are now extinct 					
Key Learning Objectives & Skills	<ul style="list-style-type: none"> • Analyze data from labs • Analyze models of evolution • Identify structures • Identify key vocabulary • Formulate answers to analysis questions • Formulate predictions about future evolution • Formulate a 3 paragraph essay on evolutionary examples • Model changes in organisms over time • Infer causes of evolution • Find evidence of evolution over geological time 					
Essential Questions	<p>Statements summarizing important ideas and core processes that are central to the unit or concept and have lasting value beyond the classroom.</p> <ul style="list-style-type: none"> • How does the environment affect an individual's probability of survival and successful reproduction? • How does natural selection happen? • What role does genetic variation play in the process of natural selection • How do mutations affect survival? • How do species evolve? • How are the diverse species living today related to each other and to the species that once lived on Earth? • What kind of evidence do fossils provide about evolution? • What other kinds of information can we get from fossils? • What is the evidence that resistance to chemical control methods is evolving in other types of organisms? 					
Dates	Smart	Instructional Strategies	PA CC	Keystone or	Keystone /	Vocabulary

(estimates only)	Objectives	and Activities	Standards	PSSA Anchors	PSSA Eligible Content	
(4 weeks)	<p>What do students have to do related to the content?</p> <p>Evolution by Natural Selection</p> <ul style="list-style-type: none"> Describe how organisms exhibit a variety of traits Identify how natural selection leads to changes in populations and eventually the evolution of new species Assess examples of evolution <p>Speciation and Extinction</p> <ul style="list-style-type: none"> Analyze why some species have become extinct over time Draw conclusions about why extinction has occurred in some species Identify the cause and effect of extinction and speciation <p>Evidence for Evolution</p> <ul style="list-style-type: none"> Analyze how geologic time reflects the vast time scale of Earth Analyze visuals of organisms evolving over time Evaluate the reason for evolution over time Connect variation in organisms with evolution <p>Humans and Evolution</p> <ul style="list-style-type: none"> Compare human interactions and their relationships with other organisms Evaluate how humans have affected species through selective breeding and genetic engineering 	<p>Used to develop the skills and knowledge</p> <p>Evolution by Natural Selection</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Provide examples of evolution by natural selection Research examples of evolution Research geological time periods where evolution occurred/began <p>Speciation and Extinction</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Discuss reasons for extinction Connect extinction to geological events <p>Evidence for Evolution</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Discuss reasoning for 	<p>CC.3.6.6-8.A. CC.3.6.6-8.C CC.3.6.6-8.E CC.3.6.6-8.H CC.3.5.6-8.A CC.3.5.6-8.C CC.3.5.6-8.E CC.3.5.6-8.H CC.3.5.6-8.I. CC.3.5.6-8.J 3.1.7.A1 3.1.7.A3 3.1.7.B1 3.1.7.C1 3.1.7.C2 3.1.7.C3</p>	<p>S8.B.2.1 S8.B.2.2 S8.B.3.1 S8.B.3.2 S8.B.3.3</p>	<p>S8.B.2.1.1 S8.B.2.1.2 S8.B.2.1.3 S8.B.2.1.4 S8.B.2.1.5</p>	<p>What is the essential vocabulary of the unit or concept?</p> <p>Adaptation Cause and effect Embryos Evidence Evolution Extinction Fossils Mutation Natural selection Patterns Speciation Structure and function Traits Variation</p>

		<ul style="list-style-type: none"> evolution • Provide visuals of evolutionary examples • Group work of examples of evolution backed up by evidence <p>Humans and Evolution</p> <ul style="list-style-type: none"> • Lab based learning • Modeling systems • Reading scientific procedures • Keeping a science notebook • Constructing a concept map • Developing communication skills • Answering analysis questions based on lab activities • Predict advances in selective breeding and genetic engineering in the future • Provide examples of human effects of evolution 				
Resources	Materials, texts, videos, internet sites, software, human to support instruction <ul style="list-style-type: none"> • SEPUP-Lab aids textbook <ul style="list-style-type: none"> ◦ Lab activities ◦ Videos • Materials to model content 					
Formative Assessments	What evidence (product and/or performance) will be collected to establish that content and skills are being learned? <ul style="list-style-type: none"> • Exit tickets • Lab reports • Models • Quiz • Do now • Discussion • Stations • Oral questioning • Independent practice 					
Summative Assessments	What evidence (produce and/or performance) will be collected to determine that content and skills have been learned? <ul style="list-style-type: none"> • Unit Test • Project 					
Strategies for ELL and IEP	What tools, strategies, and resources will be used to provide accommodations and modifications to support students?					

Support	<ul style="list-style-type: none"> ● Productive pacing ● Incorporate native languages ● Use visuals ● Small group teaching ● Provide different levels of materials ● Simplify language ● Repetition ● Provide content in multiple forms
Acceleration Strategies	<p>What tools, strategies, and resources will be used to help advance students closer to grade-level expectations</p> <ul style="list-style-type: none"> ● Scaffolding of material ● Collaboration with others ● Grouping of students ● Concrete examples ● Visuals ● Integrate technology ● Goal setting

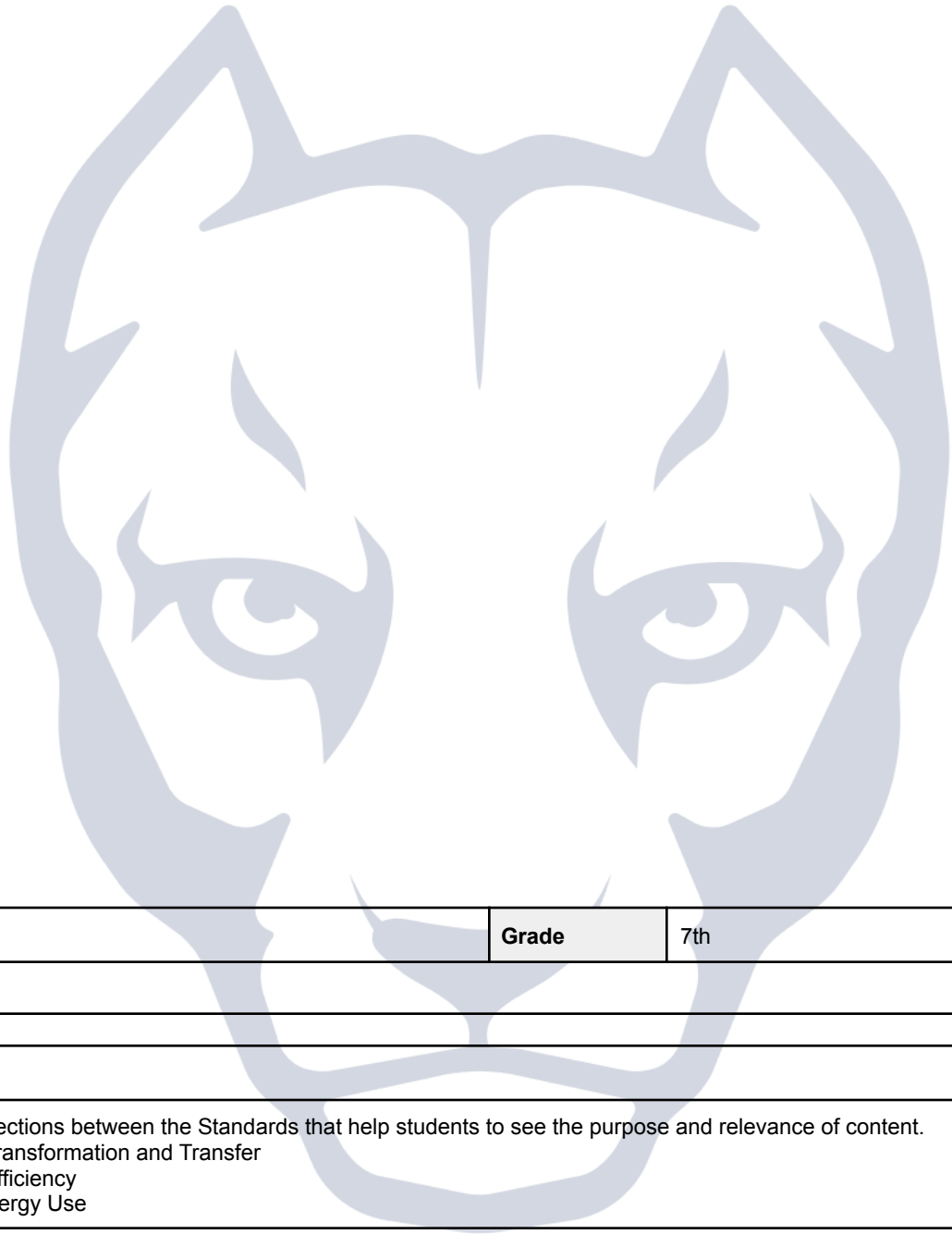
IAA Curriculum

Content Area	Science	Grade	7th Grade
Course Name	Earth Science		
Unit 5/ Concepts	Unit 5: Solar System and Beyond		
Big Ideas	<ul style="list-style-type: none"> ● Phases of the moon ● Eclipses ● Earth's orbit and seasons 		

	<ul style="list-style-type: none"> • The size and scale of the solar system • Gravity's role in the solar system and the galaxy • The day to day changes of the moon are called phases • An eclipse occurs when one space object blocks sunlight from reaching another space object • Every year, Earth completes one orbit around the Sun • The Solar System consists of the Sun, eight planets, their moons, asteroids, comets, and dwarf planets • Earth is constantly orbiting the Sun, just like all other planets 					
Key Learning Objectives & Skills	<ul style="list-style-type: none"> • Analyze data from labs • Model the solar system • Model the phases of the moon • Analyze models • Identify the planets and their properties • Identify key vocabulary • Formulate answers to analysis questions • Formulate predictions of the solar system in the future • Identify the components of the solar system • Graph the distances of planets 					
Essential Questions	<p>Statements summarizing important ideas and core processes that are central to the unit or concept and have lasting value beyond the classroom.</p> <ul style="list-style-type: none"> • What have we learned from missions to space? • How can we predict changes in the Moon's appearance? • What causes the cycle of the Moon's phases that we observe from Earth? • How does the Moon's orbit around Earth cause the Moon's phases to repeat around every 29 days? • What do you observe about the length of daylight and the position of the Sun in the sky over the course of a year? • What does Earth's orbit around the Sun have to do with seasons? • Why does Earth's tilt cause different places on Earth to receive different amounts of energy from the Sun? • Why does Earth have seasons? • What types of objects are found in space? • What determines the amount of gravitational force between objects? • How does gravity affect the motions of objects in space? • How can models help us understand the role of gravity in the motion of space objects? 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
(4 weeks)	<p>What do students have to do related to the content?</p> <p>Phases of the moon</p> <ul style="list-style-type: none"> • Identify the phases of the moon by picture and description • Analyze the cause of the phases of the moon 	<p>Used to develop the skills and knowledge</p> <p>Phases of the moon</p> <ul style="list-style-type: none"> • Lab based learning • Modeling systems • Reading scientific procedures • Keeping a science notebook • Constructing a concept map 	<p>3.3.7.B1 3.3.7.B2 3.4.7.A3 3.3.7.A6 3.1.7.C3 3.3.7.A3 CC.3.5.6-8.A. CC.3.5.6-8.C.</p>	<p>S.7.A.1.1 S.7.A.1.3 S.7.A.2.1 S.7.D.3.1</p>	<p>S.7.A.1.1.1 S.7.A.1.1.2 S.7.A.1.3.2 S.7.A.2.1.1 S.7.A.2.1.2 S.7.D.3.1.1 S.7.D.3.1.2 S.7.D.3.1.3</p>	<p>What is the essential vocabulary of the unit or concept?</p> <p>Cycle Earth's tilt Galaxy</p>

	<ul style="list-style-type: none"> Model the phases of the moon <p>Eclipses</p> <ul style="list-style-type: none"> Analyze the reasons for eclipse's occurring Model different eclipses <p>Earth's orbit and seasons</p> <ul style="list-style-type: none"> Identify the length of rotation and revolution of Earth Model, to scale, Earth's orbit Analyze the cause of seasons Analyze seasons around the world Cite evidence of different seasons around the world and the reason Compare and contrast weather of one location on earth and another <p>Size and Scale of the Solar System</p> <ul style="list-style-type: none"> Describe how Earth is constantly moving and in what locations Graph the locations of planets from the sun Connect the properties of planets to their locations in space List the planets in order from the sun Classify the inner and outer planets 	<ul style="list-style-type: none"> Developing communication skills Answering analysis questions based on lab activities Model the phases Draw the phases Discusses causes of the phases <p>Eclipses</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Draw eclipses Model eclipses <p>Earth's orbit and seasons</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Model earth orbit Map out locations of seasons <p>Size and Scale of the Solar System</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Make a model of the solar system Analyze the model of the solar system 	<p>CC.3.5.6-8.G. CC.3.5.6-8.I CC.3.6.6-8.A. CC.3.6.6-8.D. CC.3.6.6-8.F. CC.3.6.6-8.H. CC.3.6.6-8.J.I.</p>		<p>S.7.D.3.1.4</p>	<p>Gravity Model Moon Phases Pattern Scale Solar System</p>
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		<ul style="list-style-type: none"> • Discuss the effects of the size and scale of the system 				
Resources	<p>Materials, texts, videos, internet sites, software, human to support instruction</p> <ul style="list-style-type: none"> • SEPUP-Lab aids textbook <ul style="list-style-type: none"> ◦ Lab activities ◦ Videos • Materials to model content 					
Formative Assessments	<p>What evidence (product and/or performance) will be collected to establish that content and skills are being learned?</p> <ul style="list-style-type: none"> • Exit tickets • Lab reports • Models • Quiz • Do now • Discussion • Stations • Oral questioning • Independent practice 					
Summative Assessments	<p>What evidence (produce and/or performance) will be collected to determine that content and skills have been learned?</p> <ul style="list-style-type: none"> • Unit Test • Project 					
Strategies for ELL and IEP Support	<p>What tools, strategies, and resources will be used to provide accommodations and modifications to support students?</p> <ul style="list-style-type: none"> • Productive pacing • Incorporate native languages • Use visuals • Small group teaching • Provide different levels of materials • Simplify language • Repetition • Provide content in multiple forms 					
Acceleration Strategies	<p>What tools, strategies, and resources will be used to help advance students closer to grade-level expectations</p> <ul style="list-style-type: none"> • Scaffolding of material • Collaboration with others • Grouping of students • Concrete examples • Visuals • Integrate technology • Goal setting 					



IAA Curriculum

Content Area	Science	Grade	7th
Course Name	Earth Science		
Unit 6/ Concepts	Unit 6: Energy		
Big Ideas	Themes and connections between the Standards that help students to see the purpose and relevance of content. <ul style="list-style-type: none">• Energy Transformation and Transfer• Energy Efficiency• Home Energy Use		

	<ul style="list-style-type: none"> ● Inquiry is at the heart of science, and an important component of inquiry is scientific investigation, including experimentation. ● An engineer uses science and technology to build a product or design a process that solves a problem or makes the world better. ● Science and engineering are human activities. People from all over the world engage in science and engineering and use scientific information and technological solutions. 					
Key Learning Objectives & Skills	<ul style="list-style-type: none"> ● Analyze data from labs ● Model systems ● Analyze models ● Identify functions ● Identify key vocabulary ● Formulate answers to analysis questions ● Formulate predictions ● Model energy efficiency ● Identify patterns in home energy use 					
Essential Questions	<p>Statements summarizing important ideas and core processes that are central to the unit or concept and have lasting value beyond the classroom.</p> <ul style="list-style-type: none"> ● What does it take to reduce energy use in a home? ● How does the release height and mass of an object affect its gravitational potential energy? ● How is energy transformed on a roller coaster? ● How can kinetic energy of motion be transformed into another kind of kinetic energy: thermal energy? ● How can you use the law of conservation of energy to describe energy transformations? ● How can you use the law of conservation of energy to describe energy transformations? ● What happens to thermal energy when hot and cold water are combined? ● What affects how much thermal energy can be stored in or released from an object? ● How does an understanding of energy help scientists explain phenomena in all fields of science? ● How can you increase or decrease the rate of thermal energy transfer? ● What properties of matter affect how it interacts with solar energy? ● What are the different ways that thermal energy is transferred? ● How can you engineer a device to maximize its ability to transfer solar energy? ● How can we measure the efficiency of a light bulb? ● How can features in a home affect the energy efficiency of the home? 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
(4 weeks)	What do students have to do related to the content?	Used to develop the skills and knowledge				What is the essential vocabulary of the unit or concept?
	Energy Transformation and Transfer <ul style="list-style-type: none"> ● Compare various energy sources and describe how these energy sources are 	Energy Transformation and Transfer <ul style="list-style-type: none"> ● Lab based learning ● Modeling systems ● Reading scientific procedures ● Keeping a science notebook 	CC.3.5.6-8.A. CC.3.5.6-8.C. CC.3.5.6-8.G. CC.3.5.6-8.I CC.3.6.6-8.A.	S8.C.2.1 S8.C.2.2	S8.C.2.1.1 S8.C.2.1.2 S8.C.2.1.3 S8.C.2.2.1 S8.C.2.2.2	constraints criteria/criterion energy efficiency

	<p>transferred.</p> <ul style="list-style-type: none"> Describe the Sun as the major source of energy that impacts the environment. Compare the time span of renewability for fossil fuels and alternative fuels. Describe the waste derived from the use of renewable and nonrenewable resources and their potential impact on the environment. Construct and interpret graphical displays of data IOT describe the relationships of kinetic energy to the mass of an object and to the speed of an object. Develop a model IOT describing that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. <p>Energy Efficiency</p> <ul style="list-style-type: none"> Describe positive and negative effects of scientific results or developments. Describe energy as a property of objects associated with heat, light, electricity, magnetism, mechanical motion, and sound and understand the thermal behavior of our bodies and those objects around us. Differentiate between potential and kinetic energy IOT describe how energy can be changed from one form to another 	<ul style="list-style-type: none"> Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Create a venn diagram Observe organisms and energy transfer through the food web Create a food web <p>Energy Efficiency</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Debate causes and effects of energy efficiency Create technology models that increase energy efficiency Model the changing of energy systems <p>Home Energy Use</p> <ul style="list-style-type: none"> Lab based learning Modeling systems Reading scientific procedures Keeping a science notebook Constructing a concept map Developing communication skills Answering analysis questions based on lab activities Create a new way for more efficient home energy use Debate on home technology and its energy efficiency Write an argumentative 2 paragraph paper on one home item and its efficiency 	<p>CC.3.6.6-8.D. CC.3.6.6-8.F. CC.3.6.6-8.H. CC.3.6.6-8.J.I. 3.2.7.A1 3.2.7.A3 3.2.7.A6 3.2.7.B2 3.2.7.B3</p>		<p>S8.C.2.2.3</p>	<p>energy transfer energy transformation engineering design insulation law of conservation of energy kinetic energy potential energy temperature thermal energy trade-offs</p>
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	<p>(transformed) as it moves through a system or transferred from one system to another system.</p> <ul style="list-style-type: none"> Identifying the Sun as a source of energy IOT explains how energy from the Sun impacts the environment. <p>Home Energy Use</p> <ul style="list-style-type: none"> Identify between renewable and nonrenewable energy sources IOT describe the potential impact of both on the environment. Identifying between different forms of energy IOT give examples of how one form of energy can be converted to a different form of energy. Identify between kinetic and potential energy. Identify among forms of energy and sources of energy. 					
Resources	<p>Materials, texts, videos, internet sites, software, human to support instruction</p> <ul style="list-style-type: none"> SEPUP-Lab aids textbook <ul style="list-style-type: none"> Lab activities Videos Materials to model content 					
Formative Assessments	<p>What evidence (product and/or performance) will be collected to establish that content and skills are being learned?</p> <ul style="list-style-type: none"> Exit tickets Lab reports Models Quiz Do now Discussion Stations Oral questioning Independent practice 					

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Acceleration Strategies	What tools, strategies, and resources will be used to help advance students closer to grade-level expectations <ul style="list-style-type: none"> ● Scaffolding of material ● Collaboration with others ● Grouping of students ● Concrete examples ● Visuals ● Integrate technology ● Goal setting