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"Project" Activity	Source	Science			Skills		Literacy	Adaptation	Allilial Signs	Agriculture Basic Survival Needs	Biodiversity	Camouflage	Career/Occupation/Vocation	Carrying Capacity	Change	Communications	Community Attitude	Conservation	Consumptive/Nonconsumptive	Crowding	Cycles	Culture Dependence of Plants	Economics	Ecosystems	Endangered Species	Energy	Environmental Awareness	Fire	Food Chains/Food Webs	Habitat	Herbivores, Carnivores History of Natural Resources	Interdependence	Intrinsic Value	NonNative Species	Land Use	Laws/Regulations/Policy	Natural Resources Management	Limiting Factors	Pollution	Population Dynamics	≞ i ∶	Renewabie/Nonrenewabie resources	Senses	Succession	Urban Environment	Value of Natural Resources	Water	Iowa Supplement
A Vision for the Future	PWL		Х																																													
Aquatic Roots	PWA	Х																																														
Artic Survival	PW		Х																																													
Back From the Brink	PW	Х	Х			Х																																										
Bird Song Survey	PW	Х																																														
Birds of Prey	PW	Х			Х																																											
Bottleneck Genes	PW	Х																																														
Carrying Capacity	PW	Х																																														
Checks and Balances	PW	Х																																														
Community Character	PWL		Х																																													
Dam Design	PWA	Х	Х																																													
Deer Crossing	PW		Х			Х																																										
Deer Dilemma	PW	Х	Х			Х																																										
Dropping in on Deer	PW	Х			Х																																											
Edge of Home, The	PWA	Х																																														
Energy Pipeline	PW	Х																																														
Far Reaching Decisions	PWL		Х																																													
Fire Ecologies	PW	Х																																														
Fishy Who's Who	PWA	Х																																														
Flip the Switch for Wildlife	PW	Х																																														
Forest in a jar	PW	Х				Х																																										
From Bison to Bread	PW	Х	Х																																													
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Know Your Legislation - What's in It for Wildlife	PW		Х			Х																																										
Living Research - Aquatic Heroes & Heroines	PWA		Х																																													
Mapping Your Community through Time	PWL		Х																																												1	
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Philosophical Differences	PWL	+	^			~	+		+											-	+								-							_	-		+	-	-		+-	1	\vdash	\dashv	\dashv	-
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Pond Succession		Х	.,				4																		_				_	_																\dashv	4	
Regional Community Issues: Ogallala Aquifer	PWL		Х																																													

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"Project" Activity	Source	Science	Social Studies	21st Century Skills		Literacy	Audpitation	Anriculture	Sasic Survival Needs	Siodiversity	Samouflage	Sareer/Occupation/Vocation	Carrying Capacity	Communications	Community Attitude	Conservation	Consumptive/Nonconsumptive	Crowding	Sycles	Jonandonco of Diante	Sconomics	cosystems	Endangered Species	Energy	Environmental Awareness	ire	:ood Chains/Food Webs	derbivores, Carnivores, Omnivores	listory of Natural Resources	luman Impacts	nterdependence ntrinsic Value	VonNative Species	and Use	-aws/Regulations/Policy	Natural Resources Management	imiting Factors	Pollution	Population Dynamics	Predator/Prey Relationships Renewable/Nonrenewable Resources	Resource Agencies	Senses	Succession	Environment	/alue of Natural Resources	vater Iowa Supplement	יייייייייייייייייייייייייייייייייייייי
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Sustainability: Then, Now, Later	PW	Х	Х		Х																																									
Time Lapse	PW	Х																																												
Turkey Trouble	PW				Χ																																									1
Water Canaries	PWA	Х																																												
We're In this together	PW	Х	Х		Х																																									
What Did Your Lunch Cost Wildlife	PW	Х																																												
What's For Dinner	PW	Х																																											1	
Who Fits Here	PW	Х																																												
Wild Bill's Fate	PW		Х		Х																																								1	1
Wildlife Issues: Community Attitude Survey	PW	Х			х																																									
Wildlife on Coins and Stamps	PW		Χ		Х																																								1	
Wildlife Research	PW	Χ																																											T	
World Travelers	PW	Х																																											1	1

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High School (9-12) Science Essential Skills and Concepts

	High School (9-12) Science E	<u> </u>	sential Skills and Concepts
#	Science as Inquiry (Inquiry) Description	#	Earth & Space (Earth) Description
1	Identify questions and concepts that guide scientific investigations.	1	Understand and apply knowledge of Geochemical cycles. Principles include but not limited to:
2	Design and conduct a scientific investigation.	1a	Elements/atoms within Earth reservoirs: Solid Earth, oceans, atmosphere, and organisms
3	Uses technology and mathematics to improve investigations and communications	1b	Movement of elements/atoms between reservoirs
4	Formulates and revises scientific explanations and models using logic and evidence	2	Understand and apply knowledge of origin and evolution of the earth system. Principles include but not limited to:
	Incorporate mathematics in scientific inquiry		Formation of solar system
6	Think critically and logically to make the relationships between evidence and explanations	2b	Geologic time
	Recognize and analyze alternative explanations and predictions		Interactions among hydrosphere, lithosphere and atmosphere
	Communicate and defend procedures and explanations Use mathematics in all aspects of scientific inquiry		Life: origin, evolution, and effect on Earth systems Understand and apply knowledge of origin and evolution of the Universe. Principles include but not limited to:
10	Use appropriate safety procedures when conducting investigations	_	Age and origin of the universe
			Universe and galaxies Star formation
	Life Science (Life)	00	Physical Science (Physical)
	Description		Description
1	Understand and apply knowledge of the cell. Principles include but not limited to:		Understand and apply knowledge of the structure of atoms. Principles include but not limited to:
	Structures and functions	1a	Atomic structure
	Function and chemical reactions Cells grow and divide		Atomic nucleus (composition and size) Isotopes (related to relative mass)
	Understand and apply knowledge of the molecular basis of heredity. Principles include but not limited to:		Nuclear forces: fission and fusion
	DNA, chromosomes, and sexual reproduction	_	Radioactive isotopes
	Basic inheritance patterns		Predictable rates of decay
3	Understand and apply knowledge of biological evolution. Principles include but not limited to:		Understand and apply knowledge of the structure and properties of matter
3a	Species evolution		Valence electrons
	Natural selection		Chemical bonds
	Relations to common ancestor Biological classification	_	Periodic table Periodic trends
	Understand and apply knowledge of the interdependence of	Zu	Periodic fierius
	organisms. Principles include but not limited to:		Molecular and ionic structures
	Materials cycling Energy transformation		Physical properties of chemical compounds States of matter
	Organisms interrelationships		Relationship between pressure and volume of gasses
	Human modify ecosystems		Hydrocarbon compounds
5	Understand and apply knowledge of interdependence of matter, energy, and organization of living systems. Principles include but not limited to:	3	Understand and apply knowledge of chemical reactions. Principles include but not limited to:
5a	Sunlight energy conversion	3a	Conservation of matter
	Limiting factors Matter and energy flavourd concernation		Common reactions Thermack mistry
5C	Matter and energy flow and conservation	3C	Thermochemistry
	Understand and apply knowledge of interdependence of the		
6	behavior of organisms. Principles include but not limited to:		Types of reactions
6h	Nervous systems and behavior The human organism - basic functions		Acids and bases Common reactions in living systems
JU	<u> </u>		Reaction rates and equilibrium
		3h	Motions
			Forces Novitor's Laws
		_	Newton's Laws Understand and apply knowledge of motions and forces.
		4	Principles include but not limited to:
			Gravitation Maca versus weight
			Mass versus weight Electric and magnetic forces
			Understand and apply knowledge of energy and increase in
			disorder. Principles include but not limited to: Types of energy
			Energy transformations
		5c	Conservation of energy
		_	Wave phenomena
		5e Sf	Energy and matter Electromagnetic waves
		JI	Electromagnetic waves

Basic Alignment of Projects WILD, WILD Aquatic, Learning Tree activities to the Core HighSchool Social Studies Essential Concepts and Skills

Core Essential Concepts & Skills Sets	"Project" Activity	Source	Activity Skill Development	1
Behavior 1 Behavior 2 Behavior 3 Behavior 3 Behavior 4 Behavior 5 Behavior 6 Behavior 7 Economics 1 Economics 3 Economics 3 Economics 5 Economics 6 Economics 6 Economics 6 Economics 6 Economics 7 Geography 1 Geography 2 Geography 2 Geography 6 History 1 History 1 History 4 History 5 History 6 History 7 History 8 Poll Sci 1 Poll Sci 1 Poll Sci 2 Poll Sci 3 Poll Sci 3	Poll Sci 8		and a second sec	lowa Supplement Supple
	A Vision for the Future	PWL X X	X	
	Artic Survival	PW X X	X X X X X X X X X X X X X X X X X X X	
	Back from the Brink	PW X	X X X X X	X
	Community Character	PWL X		<u> </u>
	Dam Design	PWA X		<u> </u>
X X X X	Deer Crossing	PW X X	X X X X X	
X	Deer Dilemma	PW X X	X X X X X X	
X	X Far Reaching Decisions	PWL X X	X X X X X X X X	
X	From Bison to Bread	PW X X	X X X	X
x x x x x x x x x x x x x x x x x x x	Know Your Legislation - What's for Wildlife	X X	x x x	
x x x x x x x x x x x x x x x x x x x	Living Research - Aquatic Hero Heroines	X X	x x	
	Mapping Your Community throu Time	hrough PWL X	x x x x x	
	Neighborhood Design	PWL X	X	
X X X X	Personal Places	PWL X	X X X	
X X X	Philosophical Differences	PW X	X X X X	
x x x x x x x x x x x x x x x x x x x	Regional Community Issues: Ogallala Aquifer		X X	
X X X X X X X X X X X X X X X X X X X	Sustainability: Then, Now, Late	ater PW X	X X X X X X X X X X X X X X X X X X X	
X X X X X X X X X X X X X X X X X X X	We're in this Together	PW X X	X X X X	
	Wild Bill's Fate	PW X	X X X	
X X X	Wildlife on Coins and Stamps	os PW X	X X X X X X X	

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Behavioral Sciences (Behavior) (pg 3) # Description	Economics (pg 13) # Description
Understand the historical development of the behavioral sciences	Understand the function of common financial instruments.
and the changing nature of society.	To didensiand the function of common maneral instruments.
Understand the influences on individual and group behavior and	2 Understand the role of scarcity and economic trade-offs and how
group decision making.	economic conditions impact people's lives.
3 Understand the appropriate research procedures and skills of the	3 Understand the functions of economic institutions.
behavioral scientist.	
4 Understand current social issues to determine how the individual is	4 Understand how governments throughout the world influence
able to formulate opinions and respond to those issues.	economic behavior.
5 Understand how social status, social groups, social change, and	5 Understand how universal economic concepts present themselves in
social institutions influence individual and group behaviors.	various types of economics throughout the world. 6 Understand the local, state, regional, national, and international
6 Understand the process of how humans develop, learn, adapt to their	factors that create patterns of interdependence in the global
environment, and internalize their culture.	economy.
7 Understand how personality and agents of socialization impact the	7 Understand the impact of advancing technologies on the global
individual.	economy.
Geography (pg 23) # Description	History (pg 31) # Description
Understand the use of geographic tools to locate and analyze	Understand historical patterns, periods of time and the relationships
information about people, places, and environments.	among these elements.
Understand how physical and human characteristics create and	Understand how and why people create, maintain, or change
define regions.	systems of power, authority, and governance.
3 Understand how human factors and the distribution of resources	3 Understand the role of culture and cultural diffusion on the
affect the development of society and the movement of populations.	development and maintenance of societies.
4 Understand how physical and human processes shape the Earth's	4 Understand the role of individuals and groups within a society as
surface and major ecosystems.	promoters of change or the status quo.
5 Understand how human actions modify the environment and how the	5 Understand the effect of economic needs and wants on individual
environment affects humans.	and group decisions.
6 Understand how culture affects the interaction of human populations	6 Understand the effects of geographic factors on historical events.
through time and space. 7 Understand how cultural factors influence the design of human	7 Understand the role of innovation on the development and
communities.	interactions of societies.
communities.	8 Understand cause and effect relationships and other historical
	thinking skills in order to interpret events and issues.
Political Science/Civic Literacy (Poli Sci)** (pg 43)	thinking chille in cruci to interpret events and toodest
# Description	
1 Understand the rights and responsibilites of each citizen and	
demonstrate the value of lifelong civic action.	
2 Understand how the government established by the Constitution	
embodies values and principles of democracy and republicanism.	
3 Understand the purpose and function of each of the three branches	
of government established by the US Constitution.	
4 Understand the differences among the complex levels of local, state	
and national government and their inherent, expressed, and implied	
powers. 5 Understand strategies for effective political action that impacts local,	
state and national governance.	
6 Understand how law and public policy are established at the local,	
state, and national levels of government.	
7 Understand how various political systems throughout the world define	
the rights and responsibilites of the individual.	
8 Understand the role of the United States in current world affairs.	
**The essentials concepts and skills listed in social studies - Political	
Science/Civic Literacy are the same as the essential concepts and	
skills listed in 21st Century Skills - Civic Literacy.	

High School (9-12) Literacy Essential Skills and Concepts

Reading (pg 10)	Writing (pg 46)
# Description	# Description
1 Independently read a significant number of books and texts each	1 Use an effective writing process.
year. This includes reading both fiction and nonfiction in a variety of	3,
genres.	
2 Read for a variety of purposes and across content areas.	2 Use knowledge of purpose, audience, format, and medium in
	developing written communication.
3 Use a variety of skills and strategies to comprehend complex	3 Apply writing skills and strategies to effectively communicate in a
nonfiction and informational text.	variety of genres with various audiences.
4 Use a variety of strategies and skills to comprehend and interpret	4 Use writing as a tool for learning.
complex literature. 5	5 Engage in the information literacy process: access, evaluate, and
Read with fluency silently and aloud to support comprehension.	communicate information and ideas.
6 Use a variety of strategies to understand unfamiliar vocabulary found	6 Write on demand.
in narrative text, technical reading, and literary text.	o wine on demand.
m marrative tem, too moan to a sing, and morally tem.	7 Adhere to conventions generally established in spelling, punctuation,
	grammar, usage, syntax and style.
	8 Incorporate technology as a tool to enhance writing.
Speaking (pg 81)	Listening (pg 101)
# Description	# Description
1 Consider audience and variables in the speaking situation.	1 Listen for information and understanding.
2 Produce a coherent message.	2 Listen for interpretation, analysis, and evaluation.
3 Participate in a variety of communication situations.	3 Listen to establish, maintain, and enhance relationships.
4 Use appropriate content and conventions for purpose, audience,	
occasion and context.	
5 Demonstrate control of delivery skills.	
6 Participate appropriately in one-on-one situations and group settings	
7 Recognize the role of evaluation in oral communication.	
8 Recognize the role of response in oral communication.	
Viewing (pg 117)	
# Description	
1 Analyze the effects of visual media on society and culture.	
2 Use a range of strategies to interpret visual media.	
3 Apply a variety of criteria to evaluate informational media.	
4 Understand how literacy forms can be represented in visual	
narratives.	

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High School (9-12) Literacy Essential Skills and Concepts

Reading (pg 10)	Writing (pg 46)
# Description	# Description
1 Independently read a significant number of books and texts each	1 Use an effective writing process.
year. This includes reading both fiction and nonfiction in a variety of	ů.
genres.	
2 Read for a variety of purposes and across content areas.	2 Use knowledge of purpose, audience, format, and medium in
Use a variety of skills and strategies to comprehend complex	developing written communication. 3 Apply writing skills and strategies to effectively communicate in a
nonfiction and informational text.	variety of genres with various audiences.
4 Use a variety of strategies and skills to comprehend and interpret	4 Use writing as a tool for learning.
complex literature.	3
5	5 Engage in the information literacy process: access, evaluate, and
Read with fluency silently and aloud to support comprehension.	communicate information and ideas.
6 Use a variety of strategies to understand unfamiliar vocabulary found in narrative text, technical reading, and literary text.	6 Write on demand.
m nama to total too maa to a amigha na morai y total	7 Adhere to conventions generally established in spelling, punctuation,
	grammar, usage, syntax and style.
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occasion and context.	
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Iowa Department of Natural Resources