Iredell-Statesville Schools Instructional Guide

Grade 2 – Science

NCSCOS Standard and Objective	Priority (E, I, N, M) Pacing	Essential Questions What facts, concepts, skills need to be learned?	Instructional/Learning Resources and Activities (Differentiation)	Integration with Other Curriculum Areas (Differentiation)	Assessment (Differentiation)
* Flex camera to hook up to television for the entire class to view (materials in AIG Lab).					
Competency Goal 1: The learner will conduct investigations and build an understanding of animal life cycles		How can you compare and contrast animal life cycles?	This book supports NSTA/NSE standards: * Life Science at School K-2 It's Every Place You Are! Real Life Applications, Reading Comp. Selections, Independent and Group Activities * Scholastic Atlas Book of Oceans * Book Think About It! Science Problems of the Day! * Endangered Species * Grasshoppers by Graham Coleman * Mosquitoes by Enid Broderick Fisher * Secrets of the Animal World Series: Elephants Gentle Land Giants Isidro Sanchez Mussels Hard-Shelled Mollusks, Andreu Llamas Primates A Higher Intelligence, Eulalia Garcia	Kidspiration Thinking Maps Animal Habitats Hands-on Units (ELA/Writing/Tech) Write From the Beginning * Butterfly Fever by Lori Haskins (Lang. Arts) * ELA Insects Joyful Noise	Science Journals to observe and record Observation of Demonstration Tasks and Rubrics

Priority Code: E – Essential I – Important * Instructional Resource Room Updated 6/06
N – Nice to Know M – Maintenance

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			Sponges Filters of the Sea, Andreu Llamas Rays Animals With an Electric Charge Andrew Llamas Moles, Champion Excavators, Eulalia Garcia * My Backyard-Interact Unit		
1.01 Describe the life cycle of animals including: • Birth • Developing into an adult • Reproducing • Aging and death	E	What are the life cycles of different animals?	* The Blue Planet Series of Books - Back To The Sea - Along The Coasts * Brain Boosters undersea adventures * Pet Bugs * Books: e-guide by Google – Mammals * Forest Explorer * Flashy Fantastic Rain Forest Frogs * Handful of Riddles for Sci. * The Truth About Animal Senses * Taxonomy Trail-Interact SEE END OF GUIDE FOR	Kidspiration Thinking Maps ELA: Animal Life Cycle Units Web Quests ELA: One Dark Night 2.5 The Bramentown Musicians 2.2 Dear Juno 2.3 Life Cycle of a Pumpkin 2.4 * ELA Joyful Noise, Poems for 2 Voices * :Instant Activities for Poetry" pg 29 "Who's Who in a poem"	KWL charts pre-post Journals Demonstration Tasks

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			MORE BOOKS		
1.02 Observe that insects need food, air and space to grow	I	What do insects need to live?	* Eye Wonder Books * Bugs * One Day In The Woods * Primary Science Readers' Theatre * Diary of a Spider	Kidspiration Insect Unit (Tech/Writing/WFTB) ELA – The Strongest One 2.1 * ELA: Joyful Noise	Journals Demonstration Tasks
1.03 Observe the different stages of an insect life cycle	E	What are the stages of an insect life cycle?	* Critters & Bugs of the Tropical Rainforest * I Wonder Why Fish Grew Legs * Activities for Science Center Gr. 2 * Tell Me About Science and Technology * Insect and Other Invertebrates, Beatrice MacLeod	Kidspiration Insect Unit (Tech/Writing/WFTB) ELA – The Strongest One 2.1 * ELA: Joyful Noise	Journals Demonstration Tasks
1.04 Compare and contrast life cycles of other animals such as mealworms, ladybugs, crickets, guppies or frogs	N	How are the life cycles of other living things alike and different?	Book: * What Do You Do With a Tail Like This? * The Magic School Bus	Kidspiration Insect Unit (Tech/Writing/WFTB) ELA-The Strongest One 2.1	Journals Demonstration Tasks

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			Explores the World of Bugs * Physical Science at Sch. K-2 * Animal Giants *The Truth About Animal Creations * Interact: My Backyard * Living Things, Wendy Madgwick (pgs 22-23 Life Cycle of a Frog)	* ELA: Joyful Noise	
Competency Goal 2: The learner will conduct investigations and use appropriate tools to build an understanding of the changes in weather	**E**	**How can weather be documented and what are its effects on the environment?**	*** Versatiles – Activity Title Book ES-2 – What's Up With the Weather? (8,9)** **Book: Stormchasers Activity Guide** *** RAFT Writing Activity For Weather** *** Science Projects for the Intermediate Grades (Teacher Resource), Maxine Springer Schneider**		**Journals** **Demonstration Tasks** **Observations** **Projects and Rubrics**
2.01 Investigate and describe how moving air interacts with objects	E	How does moving air affect objects?	* Versatiles – Be A Weather Scientist! pgs 10-11 Bk ES2 * Versatiles The Amazing Journey Describe and explain the	ELA: The Strongest One 2.1 Cowboys 2.6 Red, White and Blue 2.6 Just Like Josh Gibson 2.6	Journals Demonstration Tasks Observations Projects and Rubrics

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			water cycle. * Versatiles – A Blanket of Air	One Dark Night 2.4 Ronald Morgan Goes to Bat 2.2 Rosa and Blanca 2.3	
2.02 Observe the force of air pressure pushing on objects	I	How does air under pressure affect objects?	* Try It Science Level 3 Pg. 44-47 * Tell Me About Science p 116	ELA: Exploring Space with an Astronaut 2.1 Just Like Josh Gibson 2.6 Firefight 2.5	Journals Demonstration Tasks Observations Projects and Rubrics
2.03 Describe weather using quantitative measures of : • Temperature • Wind direction • Wind speed • Precipitation	E	What words can be used to measure weather?	* Versatiles: Book ES-1,-2,-3 * Watch Out For Weather (use words that describe weather conditions) p.14-15 * Clouds Come With The Weather pgs 16-17 (recognize different types of clouds and their associated weather) * Weather Scientist For A Day pgs 20-21 * Changing Weather, Changing Seasons pgs 20-21	ELA: A Walk in the Desert 2.1 One Dark Night 2.5 Helen Keller 2.4 Life Cycle of a Pumpkin 2.4	Journals Demonstration Tasks Observations Projects and Rubrics
2.04 Identify and use common tools to measure weather:	E	What tools are used to measure weather?	* Versatiles Book PS-2 pgs 24-25		Journals Demonstration Tasks

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• Wind vane and anemometer • Thermometer • Rain gauge			* Versatiles Book ES2 (aka ES-3 pg 6-7) pgs 8-11 * Try It Science Level 3 pgs 24-27		Observations Projects and Rubrics
2.05 Discuss and determine how energy from the sun warms the land, air and water	E	How does the sun's heat affect the environment?	* Versatiles Book PS-2 pgs 30-31 * Versatiles Book ES-2 pgs 26-27	ELA: Iris and Walker 2.1 Exploring Space with an Astronaut 2.1 Henry and Mudge and the Starry Night 2.1 The Strongest One 2.1	Journals Demonstration Tasks Observations Projects and Rubrics
2.06 Observe and record weather changes over time and relate to time of day and time of year	I	How does weather change over time?	* Versatiles ES-2 pgs 24-25	ELA: Iris and Walker 2.1 Henry and Mudge and the Starry Night 2.1 Turtle's Race With Beaver 2.2 The Strongest One 2.1	Journals Demonstration Tasks Observations Projects and Rubrics **SEE LAST PAGE FOR ADDITIONAL ITEMS**
Competency Goal 3: The learner will observe and conduct investigations to build an understanding of changes in properties	**E**	**What are the properties of matter and what factors affect the changes in those properties?**	*** Versatiles: Book PS-l** *** Versatiles: Book PS-2 pgs 4-9** *** Fact of Matter (define and describe some of the properties of matter pgs 2-3)**	**2.06 ELA: A Turkey for Thanksgiving 2.2** **The Bramentown Musicians 2.2**	**Journals** **Demonstration Tasks** **Experiments**

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3.01 Identify three states of matter: • Solid • Liquid • Gas	E	What are the states of matter?	* Versatiles * Book PS-1 * Book PS-2 pgs 2-3 * Science of Solids pg 4-5 – Identify some properties of solids.	ELA: Firefight 2.5 Rosa and Blanca 2.3	Journals Demonstration Tasks Experiments
3.02 Observe changes in state due to heating and cooling of common materials	E	How do changes in temperature affect materials?	* Book PS-1 pages 6-7 * Lovely Liquids Identify some properties of liquid	ELA: Henry and Mudge and the Starry Night 2.1 The Strongest One 2.1	Journals Demonstration Tasks Experiments
3.03 Explain how heat is produced and can move from one material or object to another	N	How is heat made and transferred?	* Book PS-1 page 5 PS-2 pgs 20-21 8-9 Science Is A Gas Identify ways in which heat can make matter change.	ELA: Firefight 2.5 Rosa and Blanca 2.3	Journals Demonstration Tasks Experiments
3.04 Show that solids, liquids, and gases can be characterized by their properties	E	What properties define the three states of matter?	* Versatiles Book PS-2 pgs 4-5		Journals Demonstration Tasks Experiments
3.05 Investigate and observe how mixtures can be made by combining solids, liquids or gases and how they can be separated again	E	How can matter be combined and separated?	* Versatiles Book PS-2 pgs 6-7		Journals Demonstration Tasks Experiments
3.06 Observe that a new material is made by combining two or more materials with properties different	I	How can a new mixture with different properties be created?	* Versatiles Book PS-2		Journals Demonstration Tasks Experiments

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from the original material					
Competency Goal 4: The learner will conduct investigations and use appropriate technology to build an understanding of the concepts of sound	**E**	**How are different sounds produced, altered, and heard?**	***Versatiles: Book PS-2 Sound it out Explain how sound is made. Pages 26-27 *Physics Usborne Bk p.18-21 *Tell Me About Science and Technology pgs 74-75**	*** Instant Activities for Poetry pg 30 "Jingling, Tinkling Bells"**	**Journals Demonstration Tasks Experiments**
4.01 Demonstrate how sound is produced by vibrating objects and vibrating columns of air	E	How is sound produced through vibrations?	* Versatiles Book PS-2 Different sounds Identify sounds with different loudness and pitch. Pgs. 28-29	ELA: Jingle Dancer 2.6	Journals Demonstration Tasks Experiments
4.02 Show how the frequency can be changed by altering the rate of the vibration	I	How is sound charged by the rate of vibrations?	* How Do Our Ears Hear pgs 14-15 * Physics pgs 18-21		Journals Demonstration Tasks Experiments
4.03 Show how the frequency can be changed by altering the size and shape of a variety of instruments	E	How can the size and shape of instruments affect sound frequency?	* Teacher's manual- Earth Level 4 Try It Science – Based on NSE – Core content and Hands on companion to * * Versatiles – Physical ETA Cuisenaire How can you study sound? pgs 44-47		Journals Demonstration Tasks Experiments
4.04 Show how the human ear detects sound by having a membrane that	E	How do we hear sounds?	* How Do Our Ears Hear? by Carol Ballard		Journals Demonstration Tasks

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vibrates when sound reaches it					Experiments
4.05 Observe and describe how sounds are made by using a variety of instruments and other "sound makers" including the human vocal cords	N	What other ways can sound be made?	* Versatiles Book PS-2 pgs 26-27 * Versatiles Book PS-3 pgs 30-31		Journals Demonstration Tasks Experiments

* More Books For 2nd Grade Competency Goal 1 1.01

- Our Planet Oceans
- Sharks by: Quest
- The Magic School Bus Inside a Beehive

Versatiles
- Life Cycle of a Frog Identify the Stages in the Life Cycle of the Frog Book LS-2 pgs 16-17

Set of Books
- Chameleon, Chameleon
- Marsh

ES – Earth Science
PS – Physical Science

PS-1: 1st grade level, but good introduction into curriculum; easy to differentiate
PS-2: 2nd grade level, but good material
PS-3: 3rd grade level; awesome for differentiating and challenging for children interested in science

ALL:
* Activities for Science Centers grade 2
* Usborne Books Physics
* Primary Science Readers' Theatre
* Tell Me About Science and Technology

RESOURCES/TRIPS – See Science Staff Development and links on website
- Division of Soil and Water
- Dept. of Environment and Natural Resources

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ALL:
TASC Kits
ELA Scott Foresman Leveled Readers and Online Leveled Readers
Write From the Beginning Resources
Kidspiration
Thinking Maps/WFTB

- N. C. Raptor Center
- Catawba Science Center
- N. C. Zoo

2.05 Integration

ELA: Cowboys 2.6
A Birthday Basket for Tia 2.6
Horace and Morris, but Mostly Dolores 2.5
Tara and Tiree, Fearless Friends 2.2
Turtle's Race with Beaver 2.2
The Bramentown Musicians 2.2
A Weed Is A Flower 2.3
Anasi Goes Fishing 2.3
Helen Keller 2.4
Frogs 2.4

* Going Buggy! K-1 by Kimberly Jordan

2.02 Integration

Ronald Morgan Goes to Bat 2.2

2.06 Integration

Anasi Goes Fishing 2.3
Dear Juno 2.3

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