

Science Lessons/Units of Study	Activity 1: Test Your Bat IQ	A2: Bat Attitudes	A3: Bat Crossword Puzzles	A4: Seeing With Your Ears	A5: Close Encounter With A Bat	A6: Going, Going, Gone	A7: Bat Masks	A8: Greetings From A Bat	A9: Bat Cave Bulletin Board	A10: What's For Dinner?	A11: How A Bat Compares To Me	A12: Bat Fruit Salad	A13: Where's My Baby?	A14: Bat Math	A15: A Year n the Life of Little Brown Bats	A16: Refrigerator Bats	A17: Bat Rap	A18: Bats In The Comics
SCIENTIFIC CONCEPTS																		
5.1: The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices.																		
(A) demonstrate safe practices during field and laboratory investigations				X									X					
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials																		
5.2: The student uses scientific methods during field and laboratory investigations.																		
(A) plan and implement descriptive and simple experimental investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology																		
(B) collect information by observing and measuring				X							X		X					
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence				X									X					
(D) communicate valid conclusions																		
(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information											X							
5.3: The student uses critical thinking and scientific problem solving to make informed decisions.																		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information																		
(B) draw inferences based on information related to promotional materials for products and services																		
(C) represent the natural world using models and identify their limitations							X	X	X	X								X
(D) evaluate the impact of research on scientific thought, society, and the environment																		
(E) connect Grade 5 science concepts with the history of science and contributions of scientists				X														
5.4: The student knows how to use a variety of tools and methods to conduct science inquiry.																		
(A) collect and analyze information using tools including calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter sticks, timing devices, magnets, collecting nets, and safety goggles											X							
(B) demonstrate that repeated investigations may increase the reliability of results																		
SCIENTIFIC CONCEPTS																		
5.5: The student knows that a system is a collection of cycles, structures, and processes that interact.																		
(A) describe some cycles, structures, and processes that are found in a simple system															X			
(B) describe some interactions that occur in a simple system																		
5.6: The student knows that some change occurs in cycles.																		

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SCIENTIFIC CONCEPTS																		
2.1: The student conducts classroom and field investigations following home and school safety procedures.																		
(A) demonstrate safe practices during classroom and field investigations				X									X					
(B) learn how to use and conserve resources and dispose of materials																		
2.2: The student develops abilities necessary to do scientific inquiry in the field and the classroom.																		
(A) ask questions about organisms, objects, and events	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
(B) plan and conduct simple descriptive investigations				X							X		X					
(C) compare results of investigations with what students and scientists know about the world				X							X		X					
(D) gather information using simple equipment and tools to extend the senses				X							X		X					
(E) construct reasonable explanations and draw conclusions using information and prior knowledge				X														
(F) communicate explanations about investigations				X														
2.3: The student knows that information and critical thinking are used in making decisions																		
(A) make decisions using information			X		X					X				X	X		X	X
(B) discuss and justify the merits of decisions					X										X			
(C) explain a problem in his/her own words and identify a task and solution related to the problem															X			
2.4: The student uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured																		
(A) collect information using tools including rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, and balances											X							
(B) measure and compare organisms and objects and parts of organisms and objects, using standard and non-standard units											X							
SCIENTIFIC CONCEPTS																		
2.5: The student knows that organisms, objects, and events have properties and patterns.																		
(A) classify and sequence organisms, objects, and events based on properties and patterns						X		X		X	X							
(B) identify, predict, replicate, and create patterns including those seen in charts, graphs, and numbers																		
2.6: The student knows that systems have parts and are composed of organisms and objects.																		
(A) manipulate, predict, and identify parts that, when separated from the whole, may result in the part or the whole not working, such as flashlights without batteries and plants without leaves																		
(B) manipulate, predict, and identify parts that, when put together, can do things they cannot do by themselves, such as a guitar and guitar strings																		
(C) observe and record the functions of plant parts																		
(D) observe and record the functions of animal parts				X			X	X	X	X								
2.7: The student knows that many types of change occur.																		

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SCIENTIFIC CONCEPTS																		
4.1: The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices.																		
(A) demonstrate safe practices during field and laboratory investigations				X									X					
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials																		
4.2The student uses scientific inquiry methods during field and laboratory investigations.																		
(A) plan and implement descriptive investigations including asking well defined questions, formulating testable hypotheses, and selecting and using equipment and technology																		
(B) collect information by observing and measuring				X							X		X					
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence				X									X					
(D) communicate valid conclusions																		
(E) construct simple graphs, tables, maps, and charts to organize, examine, and evaluate information											X							
4.3: The student uses critical thinking and scientific problem solving to make informed decisions.																		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information																		
(B) draw inferences based on information related to promotional materials for products and services																		
(C) represent the natural world using models and identify their limitations							X	X	X	X								X
(D) evaluate the impact of research on scientific thought, society, and the environment																		
(E) connect Grade 4 science concepts with the history of science and contributions of scientists				X														
4.4: The student knows how to use a variety of tools and methods to conduct science inquiry.																		
(A) collect and analyze information using tools including calculators, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses											X							
(B) demonstrate that repeated investigations may increase the reliability of results																		
SCIENTIFIC CONCEPTS																		
4.5: The student knows that complex systems may not work if some parts are removed.																		
(A) identify and describe the roles of some organisms in living systems such as plants in a schoolyard, and parts in nonliving systems such as a light bulb in a circuit	X			X		X			X	X					X			
(B) predict and draw conclusions about what happens when part of a system is removed	X					X												
4.6: The student knows that change can create recognizable patterns.																		

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SCIENTIFIC PROCESSES																		
K.1: The student participates in classroom and field investigations following home and school safety procedures.																		
(A) demonstrate safe practices during classroom and field investigations				X									X					
(B) learn how to use and conserve resources and materials																		
K.2: The student develops abilities necessary to do scientific inquiry in the field and the classroom.																		
(A) ask questions about organisms, objects, and events	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
(B) plan and conduct simple descriptive investigations				X							X		X					
(C) gather information using simple equipment and tools to extend the senses				X						X	X		X					
(D) construct reasonable explanations using information				X														
(E) communicate findings about simple investigations				X														
K.3: The student knows that information and critical thinking are used in making decisions.																		
(A) make decisions using information	X	X	X		X					X				X	X		X	X
(B) discuss and justify the merits of decisions					X													
(C) explain a problem in his/her own words and propose a solution																		
K.4: The student uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured.																		
(A) identify and use senses as tools of observation				X									X					
(B) make observations using tools including hand lenses, balances, cups, bowls, and computers											X							
SCIENTIFIC CONCEPTS																		
K.5: The student knows that organisms, objects, and events have properties and patterns.																		
(A) describe properties of objects and characteristics of organisms						X	X	X	X	X	X		X		X			
(B) observe and identify patterns including seasons, growth, and day and night and predict what happens next															X			
(C) recognize and copy patterns seen in charts and graphs																		
K.6: The student knows that systems have parts and are composed of organisms and objects.																		
(A) sort organisms and objects into groups according to their parts and describe how the groups are formed								X			X							
(B) record observations about parts of plants including leaves, roots, stems, and flowers																		
(C) record observations about parts of animals including wings, feet, heads, and tails				X			X		X		X							
(D) identify parts that, when separated from the whole, may result in the part or the whole not working, such as cars without wheels and plants without roots																		
(E) manipulate parts of objects such as toys, vehicles, or construction sets that, when put together, can do things they cannot do by themselves																		
K.7: The student knows that many types of change occur.																		

