

K – 5 SCOPE AND SEQUENCE: SCIENTIFIC REASONING AND LOGIC STRAND OBJECTIVES

SKILL	KINDERGARTEN	GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5
PWC Objective	K.1.1 and K.1.2	1.1.1	2.1.1	3.1.1	4.1.1	5.1.1
Observing	SOL K.1a—identify basic properties of object by observation SOL K.1b—make observations from multiple perspectives SOL K.2a, b, c—five senses, sensory organs, sensory descriptors	SOL 1.1a—observe differences in physical properties	SOL 2.1b—repeat observations for accuracy SOL 2.1a—differentiate observation from personal interpretation	SOL 3.1a—make observations and predictions	SOL 4.1a—make distinctions among observations, conclusions, inferences, predictions	
Communicating	SOL K.1h—picture graphs are constructed SOL K.1c—objects are described pictorially and verbally	SOL 1.1d—communicate data and observations with graphs, pictures, statements, numbers		SOL 3.1g—gather, chart, and graph data		SOL 5.1e—collect and report data using appropriate graphical representations
Classifying and Sequencing	SOL K.1d—sequence a set of objects according to size SOL K.1e—separate a set of objects into groups based on one attribute	SOL 1.1c—classify objects or events according to attributes	SOL 2.1c—use two or more attributes to classify items	SOL 3.1b—classify objects with similar characteristic into two sets and two subsets SOL 3.1k—sequence natural events chronologically		SOL 5.1a—classify rocks, minerals, organisms using a classification key
Measuring	SOL K.1f—use nonstandard units to measure objects	SOL 1.1e—measure length, mass, volume using standard, nonstandard units SOL 1.1b—use simple tools to enhance observations	SOL 2.1e—take measurements in metric and English units (length, volume, mass, temperature)	SOL 3.1d, e, f, h, i—measure volume, length, mass, temperature, time	SOL 4.1e—collect appropriate metric measurements SOL 4.1d—select appropriate instruments	SOL 5.1c—select appropriate instruments to measure SOL 5.1d—make accurate measurements with tools
Inferring		SOL 1.1h—make inferences and conclusions about objects	SOL 2.1a—differentiate observation from personal interpretation	SOL 3.1j—make inferences and conclusions	SOL 4.1a—make distinctions among observations, conclusions, inferences, predictions	

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<i>Predicting</i>	SOL K.1i—predict an unseen member of a sequence	SOL 1.1f—make predictions based on observations, not guesses	SOL 2.1d—define conditions that influence a change	SOL 3.1a—make observations and predictions	SOL 4.1h—make predictions from data	SOL 5.1f—use patterns and extrapolate data to predict SOL 5.1b—make estimations of length, mass, volume
<i>Hypothesizing</i>	SOL K.1g—develop a question from one or more observations			SOL 3.1c—formulate hypotheses	SOL 4.1b—base hypotheses on cause/effect relationships	
<i>Using Variables in Experimentation</i>		SOL 1.1g—conduct simple experiments to answer questions			SOL 4.1c—hold variables constant in an experiment	5.1g—identify manipulated and responding variables
<i>Interpreting, Analyzing, and Evaluating Data</i>	SOL K.1j—recognize unusual or unexpected results		SOL 2.1f—construct graphs using numbered axes SOL 2.1g—recognize unexpected or unusual data		SOL 4.1f—display data on bar and line graphs SOL 4.1h—make predictions from data SOL 4.1g—recognize contradictory data	SOL 5.1f—use patterns and extrapolate data to predict
<i>Designing, Constructing, & Using Models</i>			SOL 2.1h—construct simple physical models			
<i>Nature of Science</i>						SOL 5.1h—demonstrate an understanding of the nature of science (solving problems using scientific methods; identifying scientific issues; evaluating quality of scientific information; posing and evaluating arguments)