SCIENCE CLASSROOM OBSERVATION INSTRUMENT
<mark>K-2 Version</mark>

School _____Name of Teacher _____ Level/Class _____

Length of Observation _____

Learning Objective of the Lesson_____

_____

I. LESSON OVERVIEW

A. Learning Objective of the Lesson (Mark all that apply)
☐ Clearly communicated by the teacher using multiple means ☐ Communicated orally only ☐ Communicated in writing only ☐ Student activities consistent with the lesson objective(s) ☐ Student activities not consistent with the lesson objective(s) ☐ Lesson objective communicated but not clear ☐ Lesson objective not communicated

II. SCIENCE AND ENGINEERING PRACTICES (Check all that apply in each section)

A. Asking Questions and Defining Problems
☐ Asked questions based on observations to find more information about the natural and/or designed world.
☐ Asked questions that could be answered by an investigation.
☐ Defined a simple problem that could be solved through the development of a new or improved object or tool.
☐ Did not address this practice
Comment:

B. Developing and Using Models
☐ Distinguished between a model and the actual object, process and/or events the model represents.
☐ Compared models to identify common features and differences.
☐ Developed and/or used a model to represent amounts, relationships, relative scales (bigger/smaller).
☐ Developed and/or used a model to represent patterns in the natural and/or designed world(s).
☐ Developed a simple model, based on evidence, to represent a proposed object or tool.
☐ Did not address this practice
Comment:

C. Planning and Carrying Out Investigations
☐ With guidance, planned and conducted an investigation collaboratively with peers.
☐ Collaboratively planned and conducted an investigation to produce data to serve as the basis for evidence to answer a question.
☐ Evaluated different ways of observing or measuring a phenomenon to determine which way can best answer a question.
☐ Made observations (firsthand or from media) to collect data that can be used to make comparisons.
☐ Made measurements (firsthand or from media) to collect data that can be used to make comparisons.
☐ Made observations (firsthand or from media) of a proposed object/tool/solution to determine if it solves a problem or meets a goal.
☐ Made measurements (firsthand or from media) of a proposed object/tool/solution to determine if it solves a problem or meets a goal.
☐ Made predictions based on prior experiences.
☐ Did not address this practice.
Comment:

Adapted from NGSS Appendix F

D. Analyzing and Interpreting Data
☐ Recorded information (observations, thoughts, or ideas)
☐ Used and shared pictures, drawings and/or writings of observations.
☐ Used observations to describe patterns and/or relationships, in the natural/designed world(s), in order to answer scientific questions and solve problems.
☐ Compared predictions, based on prior experiences, to what occurred in observed events.
☐ Analyzed data from tests of an object or tool to determine if it works as intended.
☐ Did not address this practice.
Comment:

E. Using Mathematics and Computational Thinking
☐ Decided when to use qualitative vs. quantitative data.
☐ Used counting and/or numbers to identify and describe patterns in the natural or designed world(s).
☐ Described, measured and/or compared quantitative attributes of different objects.
☐ Displayed data using simple graphs.
☐ Used quantitative data to compare two alternative solutions to a problem.
☐ Did not address this practice.
Comment:

F. Constructing Explanations and Designing Solutions
☐ Made observations to construct an evidence-based account for natural phenomena.
☐ Used tools and/or materials to design or build a device that solved a specific problem or identified a solution to a specific problem.
☐ Generated and/or compared multiple solutions to a problem.
☐ Did not address this practice
Comment:

G. Engaging in Argument From Evidence
☐ Identified arguments that were supported by evidence.
☐ Distinguished between explanations that accounted for all gathered evidence and those that did not.
☐ Analyzed why some evidence was relevant to a scientific question and some was not.
☐ Distinguished between opinions and evidence, in an explanation.
☐ Listened actively to arguments, which indicated agreement or disagreement with a claim, based on evidence.
☐ Used statements, based on evidence that indicated agreement or disagreement, to retell the main points of the claim.
☐ Constructed an argument, using evidence, to support a claim.
☐ Made a claim about the effectiveness of an object, tool or solution that was supported by relevant evidence.
☐ Did not address this practice.
Comment:

H. Obtaining, Evaluating and Communicating Information
☐ Read age/grade-appropriate texts or used media to obtain scientific and/or technical information to determine patterns in or evidence about the natural and/or designed world(s).
☐ Described how specific images (e.g., a diagram showing how a machine works) supported a scientific or engineering idea.
☐ Obtained information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that were useful in answering a scientific question or supported a scientific claim.
☐ In collaboration with others, communicated information or designed ideas and/or solutions, using models, drawings, writing, or numbers that provided detail about scientific ideas, practices, or design data.
☐ Did not address this practice.
Comment: