AQDP: Ask Questions and Define Problems			Science and Engineering Practices
Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.	*Asking questions and defining problems in 3–5 builds on K–2 experiences and progresses to specifying qualitative relationships.*	*Asking questions and defining problems in 6–8 builds on K–5 experiences and progresses to specifying relationships between variables, clarify arguments and models.*	*Asking questions and defining problems in 9–12 builds on K–8 experiences and progresses to formulating, refining, and evaluating empirically testable questions and design problems using models and simulations.*
AQDP-P1: Ask questions based on observations to find more information about the natural and/or designed world(s).	**AQDP-E1:** Ask questions about what would happen if a variable is changed.	**AQDP-M1:** Ask questions that arise from careful observation of phenomena, models, or unexpected results, to clarify and/or seek additional information. **AQDP-M2:** Ask questions to identify and/or clarify evidence and/or the premise(s) of an argument. **AQDP-M3:** Ask questions to determine relationships between independent and dependent variables and relationships in models. **AQDP-M4:** Ask questions to clarify and/or refine a model, an explanation, or an engineering problem.	**AQDP-H1:** Ask questions that arise from careful observation of phenomena, or unexpected results, to clarify and/or seek additional information. **AQDP-H2:** Ask questions that arise from examining models or a theory, to clarify and/or seek additional information and relationships. **AQDP-H3:** Ask questions to determine relationships, including quantitative relationships, between independent and dependent variables. **AQDP-H4:** Ask questions to clarify and refine a model, an explanation, or an engineering problem.
AQDP-P2: Ask and/or identify questions that can be answered by an investigation.	**AQDP-E2:** Identify scientific (testable) and non-scientific (non-testable) questions. **AQDP-E3:** Ask questions that can be investigated and predict reasonable outcomes based on patterns such as cause and effect relationships.	**AQDP-M5:** Ask questions that require sufficient and appropriate empirical evidence to answer. **AQDP-M6:** Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles.	**AQDP-H5:** Evaluate a question to determine if it is testable and relevant. **AQDP-H6:** Ask questions that can be investigated within the scope of the school laboratory, research facilities, or field (e.g., outdoor environment) with available resources and, when appropriate, frame a hypothesis based on a model or theory.
No elements in his grade band	*No elements in this grade band*	**AQDP-M7:** Ask questions that challenge the premise(s) of an argument or the interpretation of a data set.	**AQDP-H7:** Ask and/or evaluate questions that challenge the premise(s) of an argument, the interpretation of a data set, or the suitability of the design.
AQDP-P3: Define a simple problem that can be solved through the development of a new or improved object or tool.	**AQDP-E4:** Use prior knowledge to describe problems that can be solved. **AQDP-E5:** Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost.	**AQDP-M8:** Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions.	**AQDP-H8:** Define a design problem that involves the development of a process or system with interacting components and criteria and constraints that may include social, technical and/or environmental considerations. **AQDP-H9:** Analyze complex real-world problems by specifying criteria and constraints for successful solutions.