

TEACHING THE SCIENCE PRACTICES

Use this overview to see the big picture!



GRADES K-2	GRADES 3-5	GRADES 6-8
(1) ASK QUESTIONS		
Scientists ask questions about the world.		
Ask a question about the world.	Ask a question that can be investigated.	Formulate a question to answer in the field or lab.
(2) USE MODELS		
Scientists use models to represent systems.		
Make a model of a familiar object.	Use a model to describe a natural process.	Use a model to explain a phenomenon.
(3) INVESTIGATE		
Scientists do investigations to test their theories.		
Make observations and measurements.	Make complex measurements.	Conduct investigation with controls/variables.
(4) ANALYZE DATA		
Scientists collect data to evaluate their theories.		
Use observations to answer questions.	Use math or logic to analyze data.	Visualize and interpret large amounts of data.
(5) USE MATH		
Scientists use math to represent variables and discover patterns.		
Generate and compare multiple solutions.	Use calculations to discover patterns.	Use mathematics to support a conclusion.
(6) ANSWER QUESTIONS		
Scientists answer questions about the world.		
Distinguish between opinions and evidence.	Base explanation on evidence.	Use science to explain natural phenomena.
(7) ARGUE USING EVIDENCE		
Scientists use evidence to support their explanations.		
Listen to others' arguments.	Provide and receive critiques of arguments.	Compare two arguments and analyze them.
(8) SHARE INFORMATION		
Scientists share theories and knowledge.		
Record observations, thoughts, and ideas.	Combine information from multiple sources.	Read using science and reasoning.