The CA NGSS Classroom

A Checklist for Administrators

The new standards have caused a shift in science instruction and how students should be learning. These checklists guide administrators in observing indicators of CA NGSS practices and 3D learning that should be evident in science classrooms.

Indicators of CA NGSS Science and Engineering Practices	Examples	Evident in Classroom? (✔)	Evidence
Asking questions and defining problems	Why don't all living things look the same? How can energy be transformed from one form to another?		
Developing and using models	My model demonstrates that fences can stop erosion of sand.		
Planning and carrying out investigations	We want to investigate whether bessbugs like soil or sand better.		
Analyzing and interpreting data	Our graph of weekly temperatures shows an average of 88°F this week, which is cooler than last week.		
Using mathematics and computational thinking	Changing the length of a vibrating object produces different sounds.		
Constructing explanations and designing solutions	Shadows change according to the time of day and the time of year because of the positions of Earth and the Sun.		
Engaging in argument from evidence	The data from my investigation is evidence that more force needs to be applied to make a car move as the car becomes heavier.		
Obtaining, evaluating, and communicating information	Our presentation shows how a mixture of sand and salt can reduce the impact of an ice storm on the roads.		

Turn the page for more indicators of 3D learning.

Notes

More Indicators of 3D Learning in the Classroom	Examples	Evident in Classroom? (✔)	Evidence
Phenomena and problem-solving drives lessons and investigations	Students are engaged with real-world phenomena and are designing solutions to real-world problems within each lesson.		
Lessons follow a progression of learning	Students are using prior knowledge and engaging in lessons that build on the previous and lay a foundation for the next.		
Students build explanations for phenomena	Students are investigating to obtain information and evidence to construct explanations for phenomena.		
Students design solutions to real-world problems	Students are developing and optimizing solutions to problems with criteria and constraints through testing and analysis		
Students communicate results	Groups present the results of their investigations/engineering projects to the class.		
Notebooks or lab books are used	Students are using science notebooks to collect data, organize their ideas and plans, and make claims supported by evidence.		
Inquiry-based instruction engages students	Students find answers, ask new questions, and engage in hands-on investigations.		
Students work collaboratively	Students actively engage in science while working in pairs or small groups.		
Lessons integrate mathematics and reading	Students read and apply math skills to obtain additional information or data.		
Teacher acts as facilitator	Teacher guides instruction by questioning, not telling. Students work both in small groups and independently.		
Use of a learning cycle (5E) is evident	Students are continually drawing upon prior knowledge, exploring and explaining phenomena, designing solutions, applying newly gained knowledge to analogous concepts, and evaluating their knowledge.		
Assessment is evident and takes multiple forms	Examples of assessment: teacher check sheets, notebooks, rubrics for scoring projects or presentations, exit slips.		
Hands-on science materials are used by students	Students engage with science materials rather than watching teacher demos or experiencing concepts only through videos or simulations.		
Focus questions are used at the beginning of a lesson or group of lessons to pique students' curiosity and motivate learning.	Teachers begin by sharing a focus question that engages students. This is revisited at the end of the lesson to assess learning. Students are aware they are engaging in lessons that will help them gather evidence to answer the focus question.		

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