

Intel® Education Teaching and Learning Ideas for SPARKvue*

Teachers and students can use Intel® Education software and unit plans to activate higher order thinking skills and foster greater student engagement.

Provides a Meaningful and Engaging Sensor-Based Data And Analysis Tool for Students to Experience 21st Century Science Learning

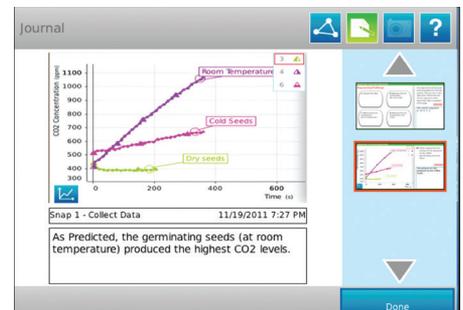
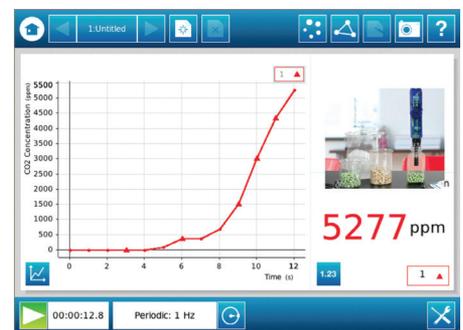
SPARKvue* allows students to collect, evaluate, and analyze data interactively, while increasing problem-solving and critical-thinking skills. The application makes use of devices' built-in cameras and sensors to collect data. As the data is collected, the application visually represents the data in a graph, table, meter, or digital display—making science and math concepts come to life. The application comes with a number of pre-configured lab experiments with instructions to make it easy for educators to get started.

The following unit plans are included as examples on how to use this data and analysis tool to promote student learning at your school. The unit plans address the following objectives to improve teaching and learning:

Elementary School: Reading Literature

Middle School: Literacy

High School: Probability and Statistics



Intel Education Unit Plan: Multimedia Morning Mania

Students use a temperature sensor to collect data during the change of the seasons to add real-time data to their observation journals.

Students become botanists and climatologists, and investigate seasonal changes. This unit can be done in conjunction with the FOSS Trees science curriculum* by studying a deciduous "class tree." Students observe the changes the class tree goes through as the seasons change. Students contrast and investigate changes in the weather, changes in the length of the day, and changes in the personal accommodations they make due to seasonal change. With guidance, students create multimedia presentations and weather graphs to compare weather in other parts of the world.

Grade Levels:

K-2

Higher Order Thinking Skills:

Analysis and interpretation

Key Learnings:

Comparison, observation, seasonal changes (cycles), data collection; representation and analysis

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Intel Education Unit Plan: Metric Madness

Students use the application to explore metric units of measure. They will compare Fahrenheit and Celsius temperature using pre-configured data or their own data to better understand the difference in scale and notation of temperature. They will use SPARKvue to help visualize converting from one unit of measure to another.

After participating in activities to learn about facets of the Celsius and Fahrenheit measuring systems, students divide into groups and create persuasive slideshow presentations showing the relative strengths of each system, e.g., easier to convert, smaller intervals per each whole number, and each team then argues for the universal adoption of one system or the other. The students' goal is to gather support for their point of view based on their findings, using their graphs for support.

Grade Levels:
6-8

Higher Order Thinking Skills:
Problem solving and persuasion

Key Learning Objectives:
Metric system, measurement,
and conversions

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Intel Education Unit Plan: Density: Got Gas

To test their theories, students use SPARKvue to sample the temperature of the air in their homemade hot air balloons. They create a graph of their findings to see how changes in temperature affect the rate of altitude change in their experiment.

Students engage in several investigations related to the density of liquids, solids, and gases. They apply new understanding about density to the design and construction of hot air balloons and make informed predictions about the variables that may affect the launch of their homemade hot air balloons and then test them. The finale is the "Got Gas?" rally where students display their balloons and use multimedia presentations to demonstrate the principles of density used in the construction of their hot air balloons.

Grade Levels:
6-9

Higher Order Thinking Skills:
Analysis and experimental inquiry

Key Learning Objectives:
Density and scientific method

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