Intel® Learning Series

Advancing Education Worldwide

# Revealing Natural Sciences, through a Webcam

**Visual, interactive engagement that makes discovering abstract concepts fun.**

**APPLICATION BRIEF**
**Intel® Learning Series**
**LabCam by WebCam Laboratory**

## Playfully Teaching the Secrets of Nature

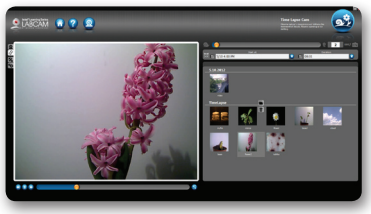
Teachers, ignite the imaginations of your students with Intel® Learning Series LabCam by WebCam Laboratory. This hands-on set of tools for investigating the natural world helps make abstract concepts tangible, because students see them with their own eyes and experience them with their own hands. Through observation and experimentation, students can explore patterns in natural processes and study everything from a free-swimming paramecium to the mountains of the moon.

As an integrated part of the Intel Learning Series Software Suite, the Intel Learning Series LabCam by WebCam Laboratory makes it irresistible to inquire and examine, with pure discovery driving the enjoyment of learning. While students can readily set up sophisticated experiments, the software is designed specifically to be easy to use and flexible. And because the solution uses the camera built into Intel Learning Series devices and other readily available materials, it is a cost-effective way to boost both the quality of your science curriculum and the enthusiasm of your students.


Join Sabine in this video as she introduces Intel® Learning Series LabCam by WebCam Laboratory.[1]

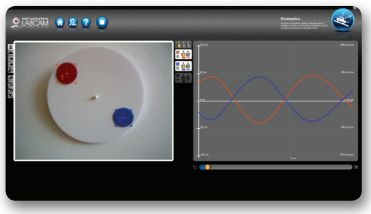
# Advanced Lab Features, Affordable and Tailored to Children

## Time Lapse Cam



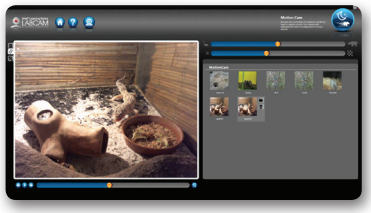
**Observe and better understand nature's slow-paced processes**, such as cloud movements, ice melting, and plants growing. After automatically stitching interval snapshots into a coherent video, a drop of ink sprawling in a glass of water surprises us with its similarity to the way cloud form. We can watch the details of a snail's movement as it appears to move briskly across the screen. Our understanding of the seasons grows as we watch the Earth hurtle around the sun.

## Kinematics



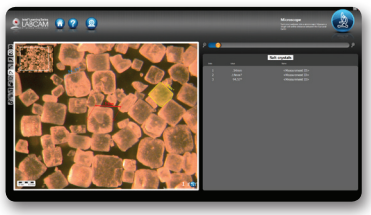
**Measure mechanical interactions among everyday objects** to demonstrate the principles of classical physics in a playful way. The software recognizes colored objects placed in view of the camera, so it can measure and record their motion, velocity, and acceleration. As we observe the behaviors of vibrations, periodic movements, a pendulum, and collisions, abstract relationships become much easier to understand. We are as surprised by our sudden discovery and insight as we are by how much fun the learning process is.

## Motion Cam



**Witness rare events in nature that we ordinarily miss**, with photos or video taken at just the right time, even when no one is around. Motion Cam responds to movement, for example filming a fly landing on a spider's web or a mouse coming out of its hole. In addition to having a privileged perspective on natural behaviors, we can gather information such as how many birds enter an area per day, easily expanding our understanding of the world.

## Microscope

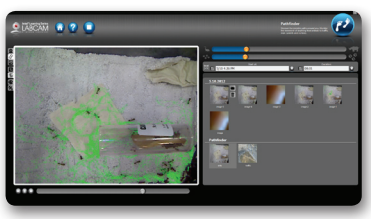


**Observe and measure objects from the tiny to the massive**, from single-celled organisms to moon craters. Equipping the ordinary webcam with an optional micro lens that can observe extremely small objects is only the beginning. The software lets us measure and compare microscopic objects. Expanding that knowledge, we can develop the creative and logical ability to find reference points to measure distances in the world around.

## Universal Logger

**Revive the usefulness of analog measurement instruments** by making them a part of the integrated computer classroom. Using the built-in camera, the software recognizes data from numbers on an analog display, needles on a dial, or even a fluid-based thermometer. Because that data is instantly logged on the computer, we can connect older equipment, automatically collect and analyze data from it, and expand the horizons of our science classrooms. This is a cost-effective alternative to dedicated, high-end data-logging solutions.

## Pathfinder



**Monitor movements in nature and detect patterns**, for insight about the world around us. For example, as the software records the motion trails of a population of ants, we see the order in their wanderings. Applying a similar approach, we can understand the behavior of particles suspended in a fluid. Finding scientific concepts everywhere, we can also discover how water currents flow in a stream or in a vortex that forms in a draining sink.

# Benefits In and Out of the Classroom

Intel Learning Series LabCam by WebCam Laboratory helps take full advantage of the built-in capabilities of sophisticated Intel Learning Series devices. The innovative solution complements the rest of the Intel Learning Series Software Suite, delivering benefits to students, teachers, parents, and schools.

## Value for Students

Students are engaged with the solution from the first time they use it, and learning about science in the natural world becomes exciting and fun.

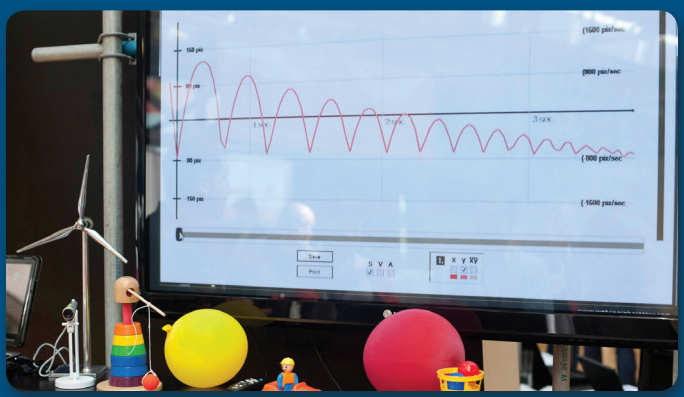
- **Playfully awakens instinctive curiosity** about the world around us
- **Fosters deep understanding** about scientific principles and phenomena
- **Develops skills of abstraction** with hands-on experiments and analysis
- **Extends learning beyond the classroom**, to the outdoors and at home

## Value for Teachers and Parents

Teachers and parents can offer a creative new perspective that makes natural science interesting and exciting.

- **Enables fascinating experiments** using ordinary, everyday objects
- **Helps encourage teamwork** as students carry out experiments together
- **Adds flexibility to natural science learning**, expanding the possibilities
- **Makes doing homework fun**, helping students stay motivated

## Value for Schools



Schools offer sophisticated, age-appropriate natural science curriculum, reducing the need for expensive lab equipment.

- **Enhances performance of students** in natural science studies
- **Facilitates the work of teachers**, helping to improve their effectiveness
- **Bridges the school-home gap** by extending science study beyond the classroom
- **Gives new life to analog equipment** by connecting it with the Universal Logger

# Intel® Learning Series

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To find out more about the Intel® Learning Series Software Suite, visit **www.IntelLearningSeries.com**

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| **Operating System** | Microsoft Windows* 7, Android* |
| **Processor** | Intel® Atom™ processor or better |
| **Memory** | 1 GB |
| **Display** | 1024 x 600 minimum |
| **Camera** | Webcam must be present |

SOLUTION PROVIDED BY:

Intel® Learning Series LABCAM BY WEBCAM LABORATORY

[1] www.youtube.com/watch?v=9Y8G1Zv7Ffo&feature=relmfu



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