

## **Caught on Video! Using Handheld Digital Video Cameras to Support Evidence-based Reasoning**

### *Other Ways to Use Handheld Cameras to Enhance Science & Engineering Instruction*

#### Digital Story Telling:

- If computers are available for use with simple editing software, allow students to create a digital portfolio of video segments from their scientific explorations (e.g., question formation, hypothesis generation, experimental procedures, etc.) or engineering design processes (e.g., background research, brainstorming, planning the first design, etc.). Have students string together video segments, still pictures and diagrams from each step into a presentation to document their science or engineering journey.
- Add a narration (writing) to the digital story to practice and reinforce writing skills and provide explanations to the final product.
- Share digital stories: Finished digital stories can be viewed collectively allowing groups to communicate and share their findings with the entire class or grade level.
- See also: Carter, Sumrall & Curry, 2006; and Santangelo & Guy, 2004.

#### Assessment:

- Use camera footage of student reasoning as a form of formative assessment. View the footage prior to the next day of instruction to address areas where students are similarly challenged by content or process.
- Use camera footage of student reasoning as more formal or summative evidence of student learning.

#### Science & Engineering Reading:

- When reading science or engineering trade books, use cameras to record students' discussions about cause/effect or problem/solution addressed in the text.

#### Data Collection:

- Use cameras to collect both quantitative and qualitative data. A wall picture can be used to measure rock size, mortar width, etc.
- Document and record change over time, simply by taking pictures from the same place in regular intervals.
- Analyze crystal or plant growth through time-lapse photography.
- See also (for digital still data collection examples): Bradbury, Gross, Goodman & Straits, 2010; Carter et al., 2006; Davison, 2009; & Jones, 2010.

#### Share Video Segments with Parents and Administrators:

- On parent conference day, replay clips from science or engineering instruction to demonstrate to parents how students are engaging with the curriculum and what it looks like to teach elementary science/engineering.
- Show administrators what is going on in your classroom as students do science and engineer.

- Use video segments as evidence of student learning during post-observation conferences with administrators.

## References

- Bradbury, L., Gross, L., Goodman, J., & Straits, W. (2010, December). Picture this! First graders explore school grounds with cameras in search of science and wind up learning about how objects rust. *Science & Children*, 48(4), 46-50.
- Carter, L., Sumrall, W.J., & Curry, K.M. (2006, July). Say cheese! Digital collections in the classroom. *Science & Children*, 43(8), 19-23.
- Davison, S. (2009, January). A picture is worth a thousand words: Using digital cameras captivates second-grade learners at the zoo. *Science & Children*, 46(5), 36-39.
- Jones, A. (2010, January). Science via photography: Using digital media to enhance animal adaptation and diversity lessons. *Science & Children*, 47(8), 26-30.
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