The science behind SAM Animation.

Using leading research to build the case for new ways of learning.

The power behind iCreate lies in the research. We bridge the innovation in the university research lab with the creativity in the classroom, and SAM Animation is our flagship product exemplifying our mission.

Under Dr. Brian Gravel's lead **using a grant from The National Science Foundation**, Tufts University researchers have identified the "Science of SAM Animation", which accounts for the research behind stop-motion as a learning tool.

> "When you build in the world, you build with your mind."

SAM Animation is supported by literature and theory related to a constructivist perspective, which purports that students construct understanding through experiences interacting with the natural world (Piaget & Inhelder, 1969). Everyday students observe, explore, and experiment with the world around them, and they must make sense of that world by inventing their own explanations. SAM Animation is a new tool for helping students express their understandings in unique, personally-meaningful, and generative ways.

There are few restrictions when it comes to using SAM Animation; that is, students are free to use markers and white boards, construction paper, physical, body motions, or whatever they wish in the creation of their animations. By turning the students' desktops into the creation space, as opposed to the computer screen, we can **capitalize on some of the inherent benefits of moving objects with one's hands**. The student creates an animation that belongs to him or her and that expresses his or her unique and often idiosyncratic way of seeing the world; the animation becomes an artifact for reflection and eventual revision of one's understanding. The belief that working with one's hands is crucial to developing more sophisticated understandings about the natural and man-made world is securely situated in Seymor Papert's notion of *constructionism (Papert, 1980; Papert & Harel, 1991). Papert believes, in essence, that* when you build in the world, you build with your mind. And, this is one of the hallmark principles of SAM Animation.

There are six key components to the science of SAM Animation listed to the right. When combined, these building blocks lead to a learning process that is meaningful, powerful, and grounded in research.

1. Constructionism – when you build in your world you build in your mind
2. Flow - Learning is rich and fun, when learning is adequately difficult
3. Representation - only you can share how you see the world
4. Engagement- learning in ways that are relevant to you make it "worth it"
5. Story – imagination is unlocked through telling your story
6. Time - Animation is thinking about past, present, and future

Adopted from *Science of SAM: Why animation is good for the classroom*
by Brian E. Gravel, Tufts University, 2009

iCreate TO Educate

Providing simple, hands-on learning to improve academic achievement

Want to learn more? Contact us to see how SAM Animation can help you reach your class' objectives.

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