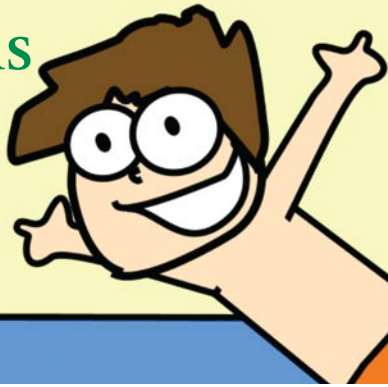


Creating Illustrated Animations

It is easier than you might think



By Melinda Kolk

The drawing tools in Frames are a powerful, yet easy way to illustrate your own animations. If you are familiar with stop-motion and classical animation, you know that working frame by frame can be time- and labor-intensive. Many teachers are reluctant to use animation in the classroom due to time constraints, yet we realize that students store knowledge in linguistic and visual form. According to Marzano's research, having students create visuals to supplement text can better help them internalize and later recall information.

Building animations is especially useful in helping students grasp concepts that are difficult to explain using text alone. In science, for example, students can demonstrate the process of chemical bonding, showing what the process looks like at the atomic level. In math, learners can demonstrate how algebraic equations relate to lines and points on a coordinate plane. Illustrating characters from a novel helps students visualize descriptive written information, and recording narration to accompany animations for these characters helps students realize the importance of voice and perspective.

So how do you get started creating animation without allocating hours and hours of classroom time? There are certainly many techniques and procedures you might use for animation, but you can use the illustration features in Frames to get started immediately. The hardest step is to simply begin, so jump in and work to refine your procedures and build your skills during the process.

If you are comfortable giving your students complete control of the animation process, and are willing to accept the fact that they will inevitably know more about Frames than you do, follow the steps that Amy Clark from Midlothian, Texas,

developed for using Frames with her first graders:

1. Draw something.
2. Click the frame in the Storyboard pane.
3. Click the Duplicate button.
4. Change something.

These simple, non-threatening steps encourage a culture of fearless exploration and risk taking in Amy's classroom, and the steps are certainly easy enough to try out in yours!

The Frames drawing tools are vector-based. Vector-based drawing tools require us to look at images as a collection of shapes, which encourages students to see patterns that don't necessarily emerge using ordinary paint programs. Because characters in Frames are built from shapes that are easy to change, making frame-by-frame modifications takes less time. Ms. Clark shares, "vector-based tools do not seem to hinder the students in my primary classroom. When we start new art projects, about half of my students choose to use Pixie to paint [raster-based] and the other half chooses to use Twist [vector-based]."

Using any computer tool, especially vector-based tools, requires some initial instruction. When Ms. Clark's students first started animating, she did much of the computer work for them. In a first class project, students studied the development of America by reading biographies. As they read, they wrote down three things they learned and used Frames to illustrate each one. Then, they chose a favorite image, duplicated it, and made small changes to the copy. Ms. Clark helped her students record narration, and then the students duplicated their two frames to make longer animations that matched their narration, ultimately combining their work into a class movie on the history of America.

Animations and movies rely on the illusion of movement. How do students know what to move and change to create this illusion? Demonstrate to your students that even subtle

differences between frames in an animation can suggest movement or change. You will have at least one visual learner in your classroom who will be able to do this intuitively. Use that student as an expert who can make suggestions to other students.

To make a character appear to wink in an animation, you could spend hours developing a number

of frames showing its eyelid in several different positions. However, a simple two-frame animation is more than adequate to convey this action. Create a frame with the eye open, and





Joseph Oliveras

When **Joseph Oliveras**, a student at Denn John Middle School in Kissimmee, Florida, began working with his art and technology teachers to transform the storyboards into stop-motion clay animations, his talent was obvious. When Jeremy Jackson, from Tech4Learning, showed him how to use the Frames drawing tools, he began manipulating the shapes he was drawing to develop animations as good as those you see on Saturday morning. Watching his animations, it becomes obvious that Joseph's dream of becoming a producer at an animation studio is sure to become a reality!

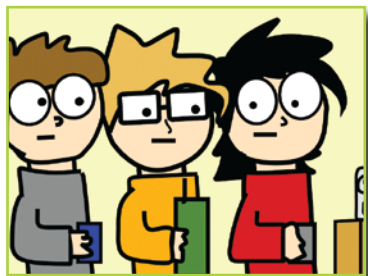


another with the eye closed, and your brain will interpret the change as a wink. Studios that produce Saturday morning cartoons only create six to eight frames of animation per second, instead of the 24 frames per second used by motion pictures, because they know that the viewer's brain will fill in any missing movement.

Remind your students that animating actions like waving, blinking, and talking can be conveyed using just a few frames. The animator needs only to create a few frames with different positions, such as a partially open mouth, a fully open mouth, and a closed mouth, and trust that the animation will effectively convey that the character is speaking.

To begin integrating animation in your classroom, have your students complete the Recipes4Success tutorial to create an animated news story. The content of the story can be on any topic, so have them write a short summary of something you have been learning in the classroom and then narrate the paragraphs through their animated news commentator.

However you begin, you and your students are sure to be hooked by this powerful visual medium!



All of the illustrations in this story come from animations created by Joseph Oliveras. To view Joseph's story and some of his amazing animations, visit: <http://connect.tech4learning.com>.

Curriculum Connection

Visualization in secondary math and science



Brad Smrstick

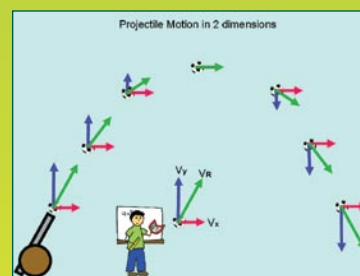
"As a former physics teacher, I found that certain topics were difficult for students to grasp without some sort of visualization process. This includes a range of topics, from fundamental math skills like solving equations and graphing functions on a coordinate plane to advanced topics such as the integration of multivariable functions in three-dimensional spaces. In high school science, the opportunities for helping students visualize concepts grow exponentially. In biology, you can illustrate the process of mitosis; in chemistry, you can depict different types of atomic bonding structures; and in physics, you can graph the parabolic path of a projectile.

Creating animations, regardless of the math or science topic you choose, is a fantastic way to create a visual representation of a complex process. Animations can be re-used (and improved) as often as necessary. They are very effective as part of a review exercise and are beneficial for students who were absent when the material was originally introduced in class.

Because Frames is so easy to learn, both teachers and students can create projects that teach skills, review concepts and demonstrate complicated processes using stop-motion animation. I like to begin by having teachers create an animation on a particular topic and then use the animation to teach the concept to their class. Next, the teacher directs their students in a mini-lesson in Frames where they explore the general process of creating a frame animation. Finally, the teacher challenges students to create their own animation on a specific topic from the curriculum they're learning.

The first few animations you create should be on topics that you are very familiar with and cover concepts your students already have some background knowledge on. As your skills grow and your students become more familiar with the process, you can advance to the more difficult topics and skills in your content area.

Keeping students involved in the entire process is essential, as both consumers of your animations and developers of their own. Research shows that students who internalize information are far more likely to retain it and be able to apply it in a meaningful and relevant way.



What better way to provide your students the opportunity to invest in their own instruction than by creating their own meaningful, relevant animations?"