PLAY TO LEARN

Great projects to try, websites to bookmark, and a world of learning to share with students. By Caralee Adams

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When kids play video games, they want to perfect their skills, advance to the next level, and become a master. It's the kind of focus that many of us would love to see in our classrooms.

From elementary through high school, computer games are being woven into the curriculum to engage students in new ways. There are software programs with friendly penguins to help young players learn basic math skills. In middle and high school history classes, students can build empires and develop strategy in simulation games such as Civilization. And science can come to life in complex games about managing animal populations.

"The nice thing about computer games is that they can invoke emotion in a more natural way that makes learning more interesting," comments Clark Aldrich, creator of numerous educational simulations and author of *Unschooling Rules*. "The traditional way that most knowledge is delivered absolutely stinks. You read it or listen to it and you forget it fairly quickly." With games, Aldrich says, you are teaching content that students will use in situations they care about—and, therefore, they will remember it.

Computer games in schools may be the secret to connecting with this digital generation, and schools are catching on—slowly. Many schools lack the equipment and teachers don't have the expertise. However, if chosen carefully, serious and purposeful games can help students develop important skills such as critical thinking. To get started, experts suggest teachers play the games themselves and then tap into the free resources online.

A Revolution in Learning

"This is not a well-organized effort yet," says James Gee, author of *What Video Games Have to Teach Us About Learning and Literacy* and professor of literacy studies at Arizona State University. He maintains that colleges are still old-fashioned in the way they train new teachers, so many aren't entering the classroom ready to take up the remote controls.

Using computer games in school tends to be the "rogue behavior" of a few teachers trying to get away with it, says Aldrich. "It tends to be bottom-up activity—a risky behavior, not an encouraged behavior," he says. "But those who do it are getting good results."

Experts say the emphasis on standards and tests crowds the curricula, making it harder for teachers to use games. Plus, many schools don't have enough computing devices. Even if they do, some have firewalls blocking games.

Since it's a grassroots movement, teachers are searching for serious games and strategies for using them effectively in the classroom, says Aldrich. Teachers may agree that video games are engaging, but they want a "kit" to know exactly how to do it, agrees Sean Dikkers, a former teacher and principal who is researching interactive media in education. "Games aren't the cure-all, but they should be in the teacher's toolbox," says Dikkers.

School of Games

Quest to Learn in New York City is ahead of the curve when it comes to gaming. This public middle school is testing out a new model in which kids not only play video games in class, they also design them and learn along the way.

"Kids will commit to games for hours and hours, when their attention span is quite short for other things," says Arana Shapiro, director of curriculum, instruction, and technology integration at the school, which now serves 145 sixth and seventh graders, with plans to expand through 12th grade eventually.

The school uses games as a structure to look at how systems work—teaching subjects in new ways with new labels, says Shapiro. Kids go to "The Ways Things Work" to take apart and put things together, learning science and math skills. In "Being, Space and Place," students look at who and where they are in social studies and language arts curriculum. In "Sports for the Mind," students experiment with media arts, game design, and video storytelling. Students progress in their "mission" and, rather than receiving traditional grades, they move through levels, from novice to apprentice to master. "They are just really engaged and come home

Make the Most of Classroom Gaming

Don't Assume
Invest time in training kids how to play the games. "We assume that if you are young you have an innate ability to play games," says author and history teacher Jeremiah McCall.

Choose Carefully
"The real goal has to be, How do you learn better?" says ed game creator Clark Aldrich. Look for games in a real-world setting that leads to a real-world activity, suggests interactive media researcher Sean Dikkers.

Connect to Learning
Bill MacKenty, tech director at the American School of Warsaw, says to pick the right game by determining the idea you want to convey and how you can tie a game into that learning.

Let Students Be Experts
Your students may know more about the technology than you—and that's okay. Allowing students to feel like experts can be very powerful in the classroom, says Quest to Learn's Arana Shapiro.

Allow Growth
Expect initial frustration before the students catch on. Teachers should let students struggle through the rough parts and even sleep on it—developing their mental muscles at night and coming in the next morning with answers, says Aldrich.

Play to Learn

Students at Quest to Learn in New York City.

excited about school—it's sort of like tricking them into learning," admits Shapiro.

Although unique, Shapiro says the approach is working. "We are super-grounded in the standards and learning outcomes. That is what drives the entire curriculum," she adds. "We take assessment seriously because so many people are skeptical. The only way to combat that is by showing that it's working."

With the types of games used at Quest to Learn, teachers may see kids showing off talents that they don't usually see in conventional lessons, says Andrew Coulson, president of education for the MIND Research Institute, which produces K–5 math software programs. "Teachers see kids solving problems that are challenges and then raise their expectation bars for the kids. Expecting more for the kids is transformative."

While there are some teachers advocating for the use of video games, Bill MacKenty, technology director at the American School of Warsaw, and others know it will take time to catch on. "It will be sort of an organic, homegrown, grassroots movement in education," he says. "I don't think you'll see games as standard practice in five years. There is too much confusion about technology and how games can and cannot work."

Games aren't fun, though, unless they are challenging. The emphasis on teaching kids to innovate and collaborate holds some promise for games in schools. Aldrich says teachers who are using this approach are on the right side of history. "This is the future," he says.

Starting Small

Teachers are finding ways to weave games into their lessons in small doses.

Dave McDivitt, a social studies teacher at Oak Hill High School in Converse, Indiana, uses commercial games such as Muzzy Lane's *Making History* to explain war strategy, and *The Sims* to let students experience various family roles.

"It's a change in routine—it brings a freshness to the class," says McDivitt. "The game is a tool for me to increase students' engagement in my classroom. When students are actively participating, they actively learn. Instead of me lecturing about World War II, and watching half of the class space out, when they play the game they are active and then I can teach along the way."

Kids struggle being in a world with no clear-cut answers, says Jeremiah McCall, a history teacher at Cincinnati Country Day School and author of *Gaming the Past: Using Video Games to Teach Secondary History.* Simulation games require students to learn new skills of collaboration, strategic decision making, leadership, project management, and looking at how systems work.

When his students do cost-benefit analyses in games, for instance, and ask what should they do, McCall often responds: "'I don't know. What do you think you should do?' For some people that's a good jolt." □

6 Video Game Activities

Tips from Dave Hutchinson's Playing to Learn: Video Games in the Classroom.

1 **Create Reviewers** Kids compare reviews of two or more video games, then add their own insights.

2 **Analyze Tactics** Students write about one or more tactics they have successfully used in a video game.

3 **Write a Pitch** Kids prepare a proposal for a brand-new game, which they then pitch to the class.

4 **Plot a Story** Students write a choose-your-own-adventure story that could be adapted for use in an adventure video game.

5 **Rank Games** The students rank and review their favorite kid-friendly video games. Results can be shown using a variety of charts.

6 **Think Strategy** Kids author their own strategy guides for a full video game or a single mission.

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QuickIdeas PreK–K

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Creepy-Crawly Science

This spring, let our six- and eight-legged friends inspire some science fun.

Bee Smell

SCIENCE FOCUS: The five senses
WHAT TO DO: Honeybees use pheromones to tell if other honeybees are part of their hive, so invite students to practice their own olfactory skills. First, place several drops of various essential oils on cotton balls. Seal each cotton ball in a plastic sandwich bag. Next, give each child a bag to open and sniff. Encourage them to use their noses to find their "hive" (the other children with the same odor).

What Do Ants Eat?

SCIENCE FOCUS: Animal diets
WHAT TO DO: Here's an easy experiment that reveals what ants like to eat. First, place several small samples of foods on a paper plate, such as sugar, carrots, bread, cheese, and fruit slices. Next, have the students predict which food or foods will attract the most ants. Place the paper plate on the ground outside. After waiting an hour, return and observe which food has the most ants near or crawling on it.

Mirror Butterflies

SCIENCE FOCUS: Symmetry in nature
WHAT TO DO: Symmetry can be found many places in nature, including butterflies. To demonstrate this phenomenon, have students draw one half of a butterfly. Next, give them a small mirror and invite them to hold it perpendicular to their picture to create a mirror butterfly. Challenge students to be "Symmetry Spies" for the day and find examples of symmetry around them.

GET MORE SPRING SCIENCE ONLINE

You can find terrific ideas for seasonal science experiments on Scholastic.com. Here are some of our favorites for grades preK–K.

■ **FIND CENTER IDEAS**
Transform your regular reading, art, and math centers into a springtime celebration with a focus on science.
Search for: "Learning Centers: Spring Into Science" from *Early Childhood Today*

■ **HEAD OUTSIDE**
Observe a worm in action, catch a rainbow, and go on a nature walk. This article gives you the how-tos.
Search for: "Springtime Science Experiments" from *Instructor*

■ **STUDY LIVING THINGS**
Find simple ideas for observing insects and plants indoors.
Search for: "Spring Into Science" from *Early Childhood Today*

■ **MAKE YOUR GARDEN GROW**
Hand out this kid-friendly guide to gardening, then head outside to get your hands dirty!
Search for: "A Child's Garden" on printables.scholastic.com.

■ **STAGES OF AN EGG**
Print a mini-book for kids to read that shows the entire journey taken by an egg.
Search for: "Stages of an Egg" on printables.scholastic.com

■ **WRITE A POSTCARD**
Help kids write a seasonal postcard about something they've learned in class.
Search for: "Create Your Own Postcard" from Scholastic News