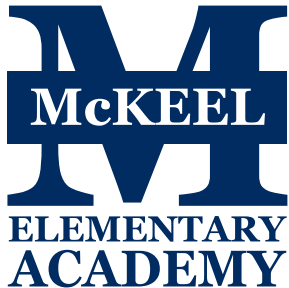


Lumens' 3D Ladibug Takes Learning to the Next Dimension

By Nancye Blair



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Isabel McKenzie,
5th grade teacher,

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By Nancye Blair
McKeel's Technology and Gifted Specialist

Until they started experimenting with the Lumens 3D Ladibug, most students at McKeel Elementary Academy thought creating 3-dimensional media was reserved for movie directors in Hollywood. Yet by using the 3D Ladibug Document Camera, students and teachers alike have discovered that students of all ages can learn and create in this intriguing format.

With its stereoscopic capabilities, turning any of the classes' models and manipulatives into larger-than-life 3D images, students and teachers were instantly captivated with the task of harnessing the tool's full potential. In nearly every classroom in which it was used, the first appealing aspect was the ability for all students to clearly see and experience lessons. This ability to provide an equitable education to all students was very valuable to educators who could now show details of simple machines, step-by-step instructions of crafts, and even the manipulation of three-dimensional geometric figures to students of all ability levels and learning styles.

Following a mesmerizing series of student 3D presentations of their simple and compound machine inventions, 5th grade teacher, Isabel McKenzie, remarked, "It makes the students become more aware and notice intricate things in the picture. It catches the attention of the students." Deena Masters, third grade teacher, noted that the use of the 3D Ladibug increased engagement with her attention-deficit students, who were naturally drawn to the 3D images and who, uncharacteristically, did not require redirection during the lesson. In fact, in all of the classes that used the 3D Ladibug, students actively asked to see demonstrations again or see expanded uses of the visual presenter. Audra Pierce, a first grade teacher who uses the tool on a regular basis, shared that "The students love it. They're so much more engaged!"

Students also truly enjoyed viewing lesson activities in 3D. Since most of the students were familiar with using 3D glasses, they did not seem to mind wearing the glasses during lessons. In fact, many positively remarked that wearing them made them feel like they were going to a movie theater. Additionally, the students were fascinated with the 3D images themselves, stating things like ▶

Use of math manipulatives to teach such abstract concepts as place value, comparing numbers, division, fractions and real world problem solving.

Science demonstrations and experiments.

Shoebox dioramas of Earth's habitats.

Student-performed presentations of written compositions using finger puppets.

"It rocks 'cuz it brings everything to life!"

**Clayton,
1st grader**

"It was neat to see what we put under it pop out in 3D!"

**Brooke,
4th grader**

"I feel like can reach out and touch (the blocks)."

**Morgan,
1st grader**



Seeing the immediate interest and engagement of the students, teachers used the 3D Ladibug across grade levels and curriculum areas to enhance various learning activities. It became a practical and innovative tool for extending traditional best practices, transforming the presentation of various concepts.

As an added bonus, the availability of the tool encouraged teachers to integrate an increased number of manipulatives, engaging visuals and hands-on activities into their curriculum units. Several teachers even shared that when designing their lesson plans, they actively considered how the 3D Ladibug could be used to enhance instruction through custom-designed 3D content.

As with any document camera use, the teachers have observed that the most effective 3D Ladibug activities take place when the students are the ones using it. To their surprise and delight, the availability of the 3D Ladibug as a learning tool actually served as a catalyst for students, inspiring them to become proactive in the creation of working models, pop-up illustrations, simulations and presentations to share with the class.

Nancye Blair, McKeel's Technology and Gifted Specialist, notes that "It's as though the 3D Ladibug compels students to create. Students volunteer, asking for permission to design models and presentations for the class even without an official assignment or the extrinsic incentive of a grade." Through student self-motivation to create moving representations of the water cycle or expansive Rube Goldberg machines to demonstrate cause and effect, the 3D Ladibug served as a tool to facilitate a student-centric learning partnership, where teachers and students work together to craft powerful learning experiences in the classroom.

Just as stereoscopic 3D images are not merely restricted to the screen on which they are projected, the benefits of using the 3D Ladibug did not stay within the confines of the classroom walls. Students and teachers began to use this special document camera to supporting media creation. By using screen and video capture functions from programs like Jing, Skitch and Screencast-o-matic, students and teachers create anaglyph movies and digital/print illustrations of their 3D images. These innovative media pieces have been shared with other students within their school, as well as on their blogs, YouTube and Twitter. Teachers and students have plans to expand their stereoscopic media creation into other 3D formats in the future.

Between its full range of traditional 2D functionalities and the adding 3D capabilities, the 3D Ladibug has served a diverse range of purposes in the classrooms at McKeel Elementary Academy. From math to science to literacy and more, the Lumens 3D Ladibug is truly taking their learning to the next dimension.