

# Bookworm robot helps children find the fun in reading

By Elli Morris  
CONTRIBUTING WRITER

If you like to read, whom do you have to thank for that gift? Was it a parent, an aunt who read stories to you as a child or maybe a teacher who took you to the library where you could have your pick of the literary world for free?

A love of books usually starts at an early age, and unfortunately, not every child develops an appreciation for the written word. For many students, reading is an unpleasant chore; it's part of school that must be endured. But Kenneth Holmes, technology education specialist at L.C. Bird High and Swift Creek Middle schools, is hoping to change that with the help of Busta Bookworm, a five-foot-tall robot that he designed and built.

Busta Bookworm is a talking, rolling robot that goes to elementary schools, interacts with children through a hidden speaker and, hopefully, gets children excited about reading. "On the secondary level (of education), when you give reading assignments, you have students that do not like to read or are not good readers," Holmes notes.

This observation motivated the creative technical educator to come up with a robot that "could talk, interact with kids. If you affect something on the elementary level, motivate or

enhance reading or get them excited about reading, hopefully it will carry on through to the middle and high school levels."

Busta Bookworm, who has several "friends and things" he takes with him on his school trips, is made of 12-inch diameter flexible tubing, a remote control vehicle with tracks instead of wheels, metal braces, Styrofoam, wood glue and a speaker. As Holmes is fond of telling his technology students, every project "starts with one single line" put down on paper. "I went to the library and went online to find what a bookworm would look like. It gave me something to go on, the basic appearance, what the kids expect to see when they think of a bookworm," explains Holmes.

Exhibiting his true veteran educator prowess, Holmes involved his secondary level technology students in the process of creating the robot and they, in turn, came up with some innovative ideas to help bring the bookworm to life. For example, the robot was initially going to have a tape recording inside, but Holmes realized that wouldn't allow interaction with the kids. One student suggested using a two-way radio or walkie-talkie, but they decided that would create too much feedback. Eventually, they settled on installing a speaker behind the bookworm's big white grin. Holmes clips a small microphone onto his own shirt, which

allows him to interact with students as though Busta Bookworm were doing the talking.

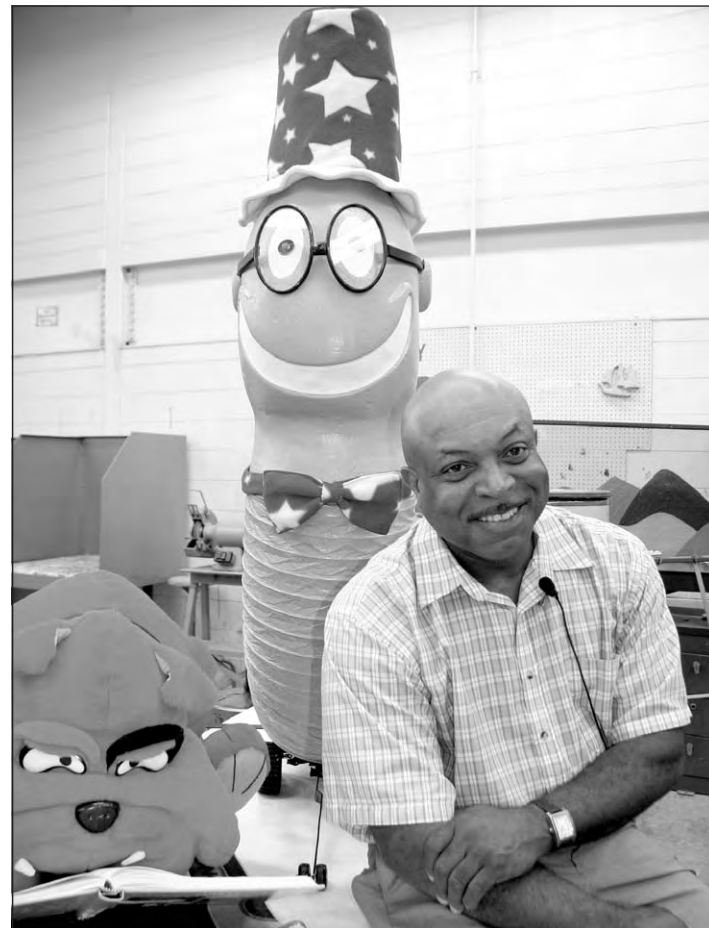
Through his smiling white cloth-covered mouth, the robot tells the elementary students, "Busta Bookworm wants you to know that it's cool to read and make good grades in school." Other times, Busta Bookworm not only gets the students excited about reading, he throws in a math or history lesson on the side.

Holmes, who was an education administrator for 11 years and has two master's degrees, has created a few other robots in the past. One robot was designed to monitor school hallways. As it roams the corridors, it advises students, "Please clear the hallways. Please clear the hallways."

For Holmes, it's a matter of "not being afraid of being innovative. As an educator, you can't be ho-hummic about what you do. There's good and bad out there waiting for them outside of school. If the school is ho-hummic, then they are going to think about the other stuff, like video games."

Holmes by no means lacks energy and enthusiasm for his students, his creations and his desire to help present and future students. He sums up his commitment to teaching, saying, "You still have to try and meet the challenge."

Busta Bookworm is sure to help him do that.



Elli Morris/Chesterfield Observer

Educator Kenneth Holmes and his robot, Busta Bookworm, will visit elementary schools to encourage students to embrace reading.

**Have a story idea?**

E-mail it to [idea@chesterfieldobserver.com](mailto:idea@chesterfieldobserver.com)

## Chesterfield County Mandatory Water-Use Restrictions



Due to severe drought conditions, the Chesterfield County Board of Supervisors approved the declaration of mandatory water-use restrictions at their Oct. 10 meeting. These restrictions apply to all Chesterfield County water customers and took effect on Monday, Oct. 15. The biggest water use in the county is attributable to lawn-irrigation systems. The ordinance for mandatory restrictions on the use of public water requires that lawn watering be done only three times per week. This is sufficient to maintain healthy lawns and gardens, according to Chesterfield County Cooperative Extension. Users of the public water system shall limit their use of public water as follows:

- 1. Decorative or landscape fountains** — Water use is prohibited.
- 2. Paved areas** — Washing is prohibited except for immediate health and safety requirements.
- 3. Swimming pools** — Limit to filling and replenishing to maintain health and safety. All other uses are prohibited.
- 4. Vehicle washing** — Noncommercial washing is limited to one day per week using only hoses with automatic shut-off nozzles. Commercial vehicle-washing businesses are permitted to operate under normal conditions.
- 5. Established landscaping and gardens** — Watering is limited to three days per week by address. Addresses ending with an odd number may water only on Tuesdays, Thursdays and Saturdays. Addresses ending with an even number and locations with no street numbers may water only on Wednesdays, Fridays and Sundays. Watering is prohibited on Mondays. Watering with buckets of up to five gallons per day is permitted any time.
- 6. Vegetable Gardens** — Limit watering vegetable gardens to any two days per week between 8 p.m. and 10 a.m. Watering by bucket is unlimited.
- 7. New landscaping** — All watering is permitted for the first 10 days after planting. Thereafter, the restriction for established landscaping and gardens shall apply. Over seeding an existing lawn does not qualify as new landscaping.
- 8. Golf courses** — Watering is restricted to Tuesday through Sunday between 8 p.m. and 4 a.m. Greens are exempted from this restriction.
- 9. Businesses** — Limit to essential use only.
- 10. Restaurants** — No restrictions.
- 11. All other consumption** — Conservation by any means is encouraged.

To view the ordinance in its entirety or for answers to related questions, visit the county's Web site at [chesterfield.gov](http://chesterfield.gov) or call the Chesterfield County Utilities Department at (804) 748-1291. Fines for violating the ordinance begin at \$100 and double each time a violation occurs until it reaches a maximum of \$1,600. Once this maximum is reached, all subsequent fines will be \$1,600.

Special Note: To maintain water quality, the Utilities Department periodically flushes hydrants throughout the county. This needs to be done for health and safety reasons, even during drought conditions, and should not be interpreted as wasting water.

**Para asistencia en español, por favor llame a Juan Santacoloma, Enlace Hispano del Condado de Chesterfield Teléfono: 796-7085.**