

Gifted and Talented Program

Bedford Elementary and Middle Schools

2012-2013
PROGRAM UPDATE

February 12, 2013

Sarah Dorer and Lisa Fontaine-Rainen Presenters

History of Programming



- #1993 - Elementary Programming started
- #1998 - Blue Ribbon Report on the Gifted and Talented Program
- #2003 - Middle School Programming started
- #2006 - Advanced Math Pull-Out Classes at Middle School started
- #Present Day - Very little GT programming in Massachusetts

Goals and Responsibilities



- To provide support and guidance for the educational needs of gifted students
- To promote teaching and learning strategies that enhance the curriculum for all students

History of Programming at JGMS

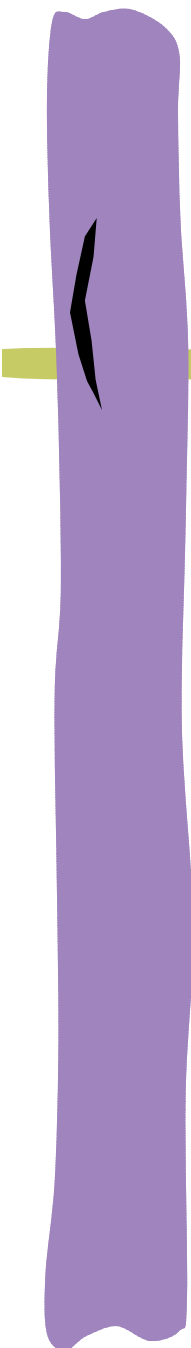
- # 2003-2004 - Math differentiation and two advanced math classes (7th and 8th), enrichment during flex times
- # 2004-2005 - English differentiation and one advanced math class (8th), enrichment during flex times
- # 2005-2006 - Differentiation opened to all disciplines, enrichment during flex times
- # 2003-2006 - Needs Assessment conducted
- # 2006 - Advanced Math Pull-Out Classes began
- # 2007 - Flex enrichment opportunities ended with schedule change
- # 2007-2009 - Focus on science differentiation
- # 2009-2012 - Differentiation again opened to all disciplines
- # 2012-present - Reinstatement of enrichment opportunities for students.

Defining Gifted

- # No clear single definition used across the state or country.
- # Characteristics frequently include:
 - ▣ Abilities above grade level - 1-2 years or more.
 - ▣ Qualitative differences in learning and social styles
 - ▣ Rapid pace of learning - more depth with less repetition.
 - ▣ Intensity and independence of spirit
 - ▣ Divergent thinking skills
 - ▣ "Drive to Master" (insatiable curiosity)
 - ▣ Asynchronous development not unusual

In Bedford, MA

- # We believe that gifted students are those students who by virtue of advanced ability, require adaptation to the curriculum to meet their educational needs. We also recognize that the advanced ability also carries concomitant affective needs. We recognize that this represents a range of ability and the needs can vary from class to class or year to year. *Developed by the GT Steering Committee, John Glenn Middle School, 2003-2004*



Programming for Elementary Students

A Continuum of programming services based on the individual needs of each child (unchanged over the years)

- # Curriculum Differentiation in the classroom
- # Enrichment
- # Acceleration
- # Cross Grading/Flexible Pacing
- # Mentorship
- # Cluster groups in classrooms
- # Independent Study

Programming for Middle School Students

A developing continuum of programming services based on the individual needs of each child (approaches have changed significantly over the years)

- # Advanced Math Pull-Out Classes
- # Curriculum Differentiation in the classroom
- # Targeted Enrichment - to specific students
- # Open Enrichment - for any student
- # Lunch Group enrichment
- # Acceleration
- # N.E.R.D.S - a social opportunity for advanced thinkers, open to every student
- # After school programming
- # Additional student support as needed

New Programmatic elements at JGMS

- # **Targeted Enrichments** - Advanced classes replacing regular enrichments, offered to specific students
 - ▣ **Limitations of Targeted Enrichments** - schedule, space, and interest dependent, not all targeted students are available.
- # **Open Enrichments** - Advanced classes at grade level enrichment time, open to every student
 - ▣ **Limitations of Open Enrichments** - schedule only allows for 6th grade this school year. Not likely to change next year.
- # **Lunch Groups** - Discussion groups held during lunch
 - ▣ **Limitations of lunch groups** - space, scheduling
- # **The Never Ending Discussions Society** - After school social group, open to all students
 - ▣ **Limitations of N.E.R.D.S** - time, transportation

Advanced Math Pull-Out Classes

A successful programming element in its 7th year at JGMS

- Intended to provide challenge for students who have mastered most or all of the regular curriculum.
- Students are clustered for access
- Advanced class curriculum focusing on "why" and asking mathematical questions.
- Curriculum parallels the regular class, then extends.
- 295 students have participated in at least one unit.
- 62 students have been in the advanced math class for the entirety of their time at JGMS*.
 - This represents approximately 5% of the student population, which is appropriate for gifted programming.

Student Accomplishments and National Awards

- ✦ Spring, 2012: State Finalists in the Siemen's "We Can Change the World" Challenge - Second grade team - Energy Conservation at Davis School



Math Olympiads for Elementary and Middle Schools Program

Math Olympiad - International Math Problem-Solving Competition:

- # Plaque of Honor (Highest Team Honor awarded to top 10% of all teams in same division) - each year for the past 11 years
- # Individual: Dr. George Lenchner Award for perfect score (2012)

Middle School Math Team - MathCounts

- # MathCounts State competition - 7 years out of 9
- # MathCounts National competition - 1 individual
- # AMC 8 - multiple honors level students every year.
- # AMC 10 - Two students qualified for next level (AIME)
- # Collaborative Problem Solving Contest - In top 25 6 years out of 7, placed as high as 7th, top middle school all six of those years.
- # Bedford High School placed 1st in the Collaborative Problem Solving Contest in its first year, 2012.
- # Various other math competitions - similarly high scores

Other Awards and Accomplishments

- # 2011 and 2009: Honorable Mention in Toshiba/NSTA ExploraVision Contest
- # NASA: NSIP 2003 and 2001
 - 2003 - Letter of Commendation : Designing a Research Base on the Moon
 - 2001 - Second Place - A Mission to Mars
- # May, 2000 : First Place in Elementary Division of JumpStart 2000 -NSF Competition
- # Field Testers for a new NASA science competition on flight
- # 2004 - "Nicholas Green Distinguished Student Award" to Pamela Weidman
- # Winners in the National Chemistry Contest (2005)
- # Winners in Boston College's Science in Poetry Contest Winners - Spring, 2006
- # Johns Hopkins Talent Search - many students scoring with honors, students earning scholarships
- # Student participation in MIT PRIMES research program at the high school level.
- # National Language Arts League - 6th and 7th grade won the competition in 2007. 7th grade placed 2nd in 2008.
- # 2009 - Our team placed 2nd at the Future City Competition
- # 2010 and 2012 - Massachusetts state winner of the You Be the Chemist Challenge (credit to Barbara Ferri)

Student Projects that Benefit the Bedford Community

Plastics and Container Recycling at Lane School Student Initiative - 4 Fifth Graders

- # The First Lane School "Green Team" (now thriving at Lane School)
- # Worked with Richard Warrington, DPW Director
 - Small pilot, Spring, 2008
 - Fully implemented in Fall, 2008
- # Massachusetts EPA "Environmental Eagles" Award, Spring 2009

"Welcome to Lane School": Video Project Welcoming Mr. Ackerman to Lane School - Independent Project of a then 4th grader (who now runs her own cooking show on Bedford TV)

Cattail Corner - A Student Field Guide (2nd grade project)

News from the Fast Lane Newspaper (15 years) - now archived at Bedford Public Library

"Student Campaign for Energy Conservation at Davis School"

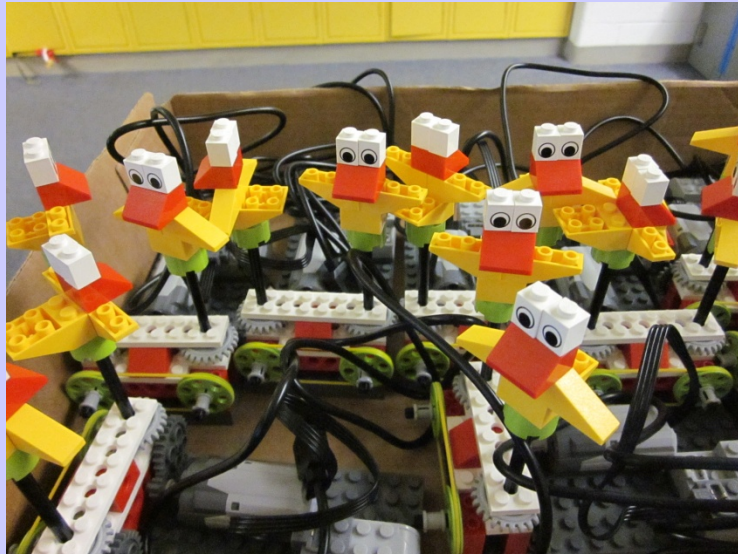
Keys to a Successful Program

- # System-wide administrative support
- # Continuum of services to meet the individual needs of students
- # Team approach to meeting the needs of children
- # Open lines of communication between G/T coordinator, teachers, parents and students
- # Flexibility, and appropriate placement from year to year
- # Use of community and outside resources
- # Program Director with
 - Awareness of characteristics of Gifted Children
 - Solid understanding of the elementary curriculum and classroom procedures
 - Extensive knowledge of child development

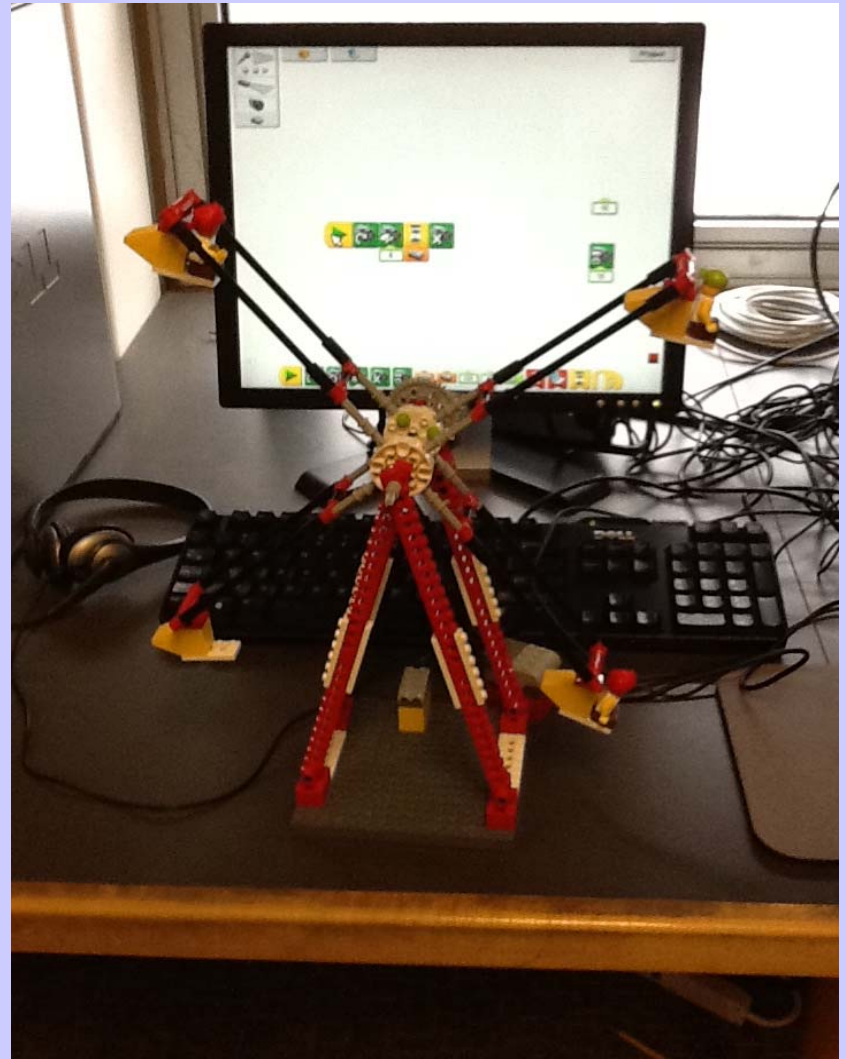
Davis and Lane School Services for all students

- Consultation with classroom teachers
- Math and ELA Enrichment where requested
- Science Enrichment for all First Grade classes
- Two Engineering Design challenges at Grade Two:
 - EIE Museum of Science: Designing Hand Pollinators
 - Lego Robotics at Grade Two (The Dancing Birds and the Hungry Alligator)
- Lego Robotics Challenge at Grade Four - Ferris Wheel - new this year
- Monthly Lane School Newspaper "News from the Fast Lane" (Open to all 4th and 5th graders - currently app. 60 "reporters")
- Activity Challenge Board in Lane School Library
- Engineering Design Challenge at Grade Five (Bridge Building competition)

Davis and Lane School Robotics



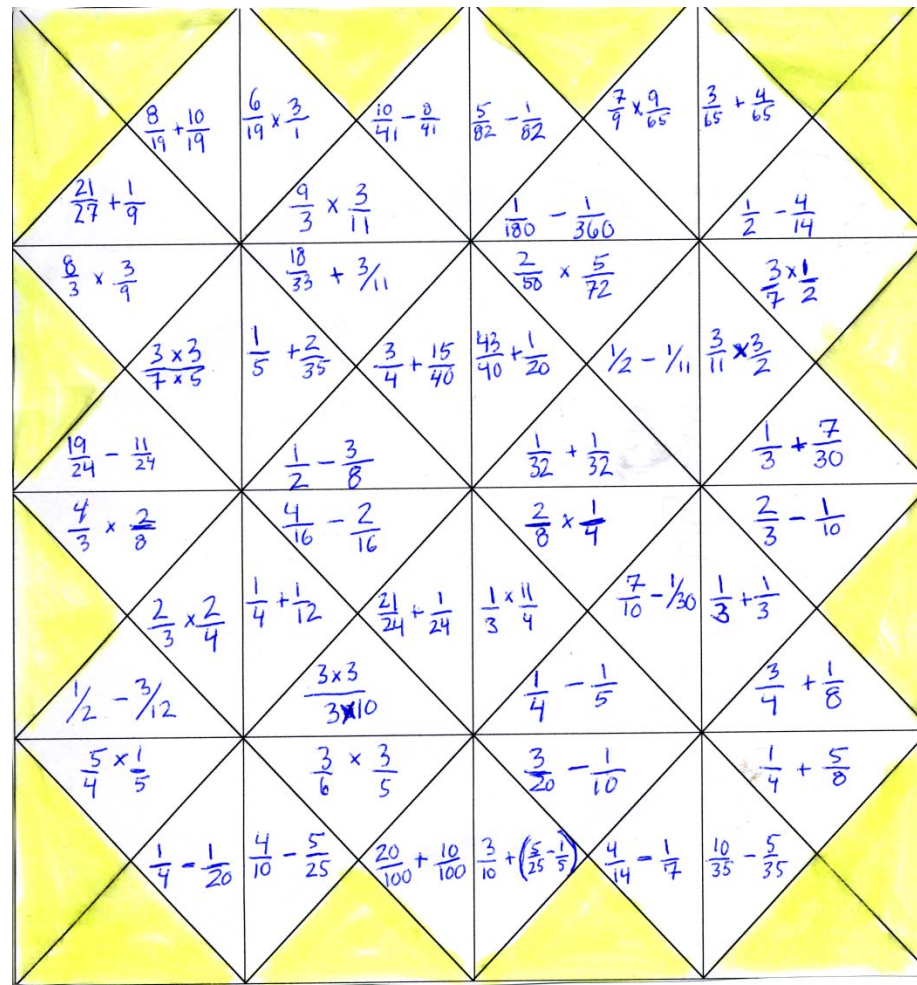
The Dancing Birds – 2nd Gr.



Ferris Wheel Simulation – 4th Grade

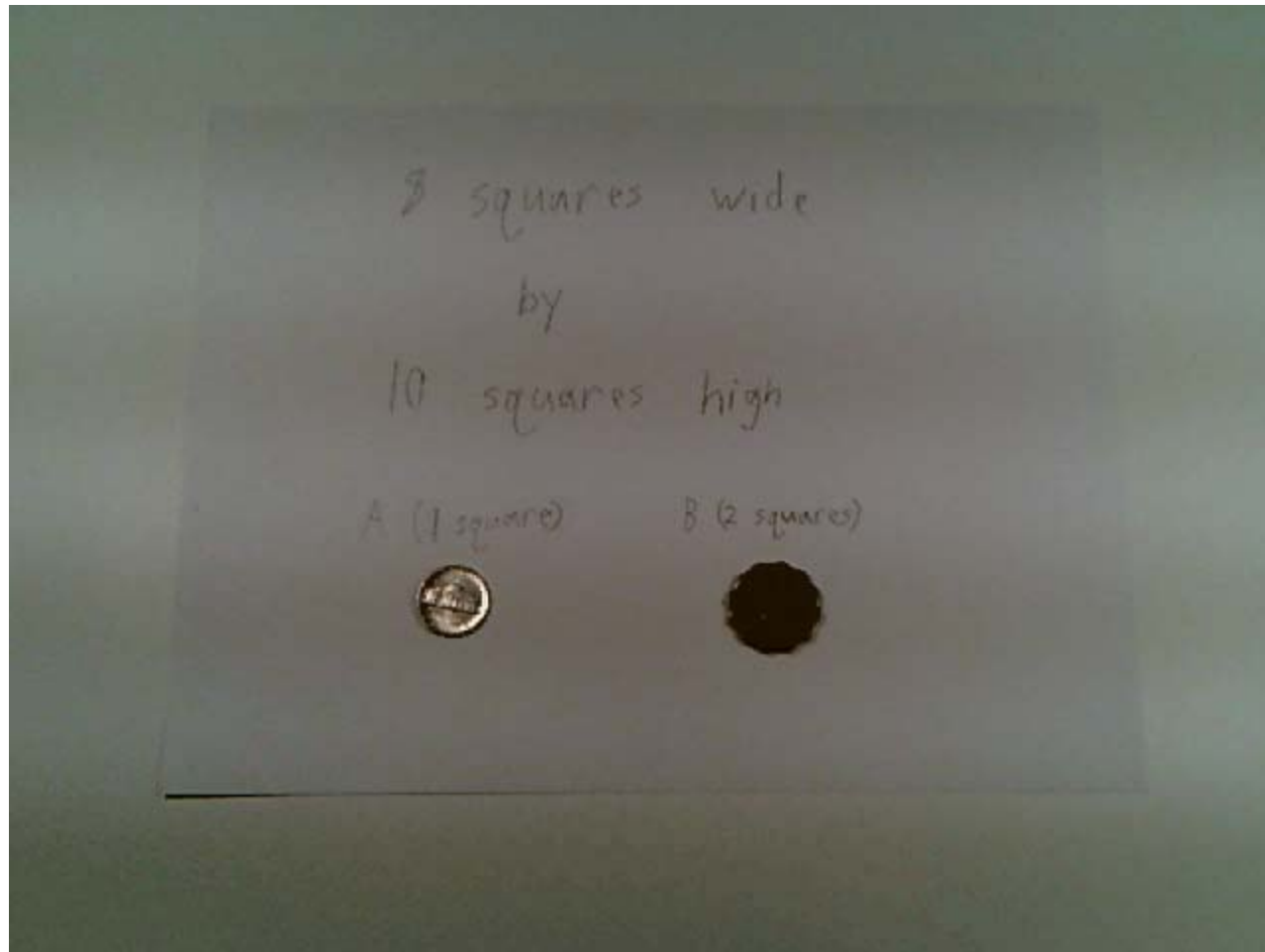
Example Work - JGMS

Students created fraction puzzles that can be played to help review fraction operations



JGMS Example Work

Original assignment asked students to propose an investigation on how balls travel on billiard tables – we had been exploring patterns when we change the dimensions of rectangular tables. This student's response was to add a second ball that travels at a different speed, and track where they end at the same point at the end of the turn. He created a stop-motion video to demonstrate his thinking.



Example work - JGMS

Students demonstrated a proof of the Pythagorean Theorem that they had not previously learned.

Follow this link for a video proof:

<http://www.youtube.com/watch?v=df5-xcyqCK0>