

2007/2008 GATE UNITS

Poetry 1-2-3: This literary unit focused on an examination of poetry: what makes a poem a poem, instruction in poetic forms, and development of creativity using all of the senses. Students learned about sound devices, rhythmic patterns, rhyme, and compression of statement by reading the works of poets and writing their own poetry. We were visited by author Heidi B. Roemer whose poetry collection, Come to My Party and Other Shape Poems, has received and been nominated for numerous awards. GATE poetry students were joined by a specially selected group of their peers for poetry writing enrichment in workshops led by Ms. Roemer. (Grades 3-8)

Game Factory: Students in this math unit learned about probability as they took on the role of game inspectors at Goodwin's Game Factory. With "fairness" defined as each player having an equal probability of winning, the inspectors performed hands-on experiments using spinners, dice, cards, coins, and other game pieces. Their task was to detect which games were unfair, determine how to modify them to make them fair, and to design a fair board game of their own. The inspectors also conducted an audit of the AMJE weekly PAWS raffle. Professional game designer Dale Ritter joined us as a mentor as the children began to create their own games. (Grades 3/4)

Invent – Students in this creative unit researched inventors and analyze how their inventions have changed our lives. They brainstormed, tinkered, and created their own inventions. After seeking "patents", the inventors marketed their works and faced the scrutiny of their peers acting as a consumer advocacy group. A field trip to view inventions at the Museum of Science and Industry provided the opportunity to learn about some of the most influential inventions in history. (Grades 3/4)

King Lexicon – Students learned about medieval times in this language arts unit in which they strove to advance from the rank of page to squire and, ultimately, knight. Unlike the knights of old, our weapons of choice were dictionaries. These mighty weapons taught the skills needed to advance in rank: alphabetizing, pronouncing, determining multiple word meanings, recognizing inflected forms of words, and studying word origins. Students applied their language skills by proofreading weekly grade-level newsletters. (Grades 3/4)

My Lights – Participants in this writing unit studied the format of well-known children’s magazines and created their own. They developed the skills of prewriting, drafting, revising, elaboration, editing, and publishing as they produced pieces in a variety of genres and “sold” them to the magazine publisher (Mrs. Kinsman). These submissions were then compiled in a magazine format. This unit included a field trip to the offices of the Hinsdale Doings newspaper, where students engaged in a question/answer session with an editor, a writer, and a photographer. A tour was also provided. (Grades 3/4)

Math Quest – Participants in this unit learned problem solving strategies within the context of a race to collect riches in four mysterious mathematical worlds. These strategies were applied to the creation and solution of word problems. Skills taught included making charts, graphs, diagrams, tables, and pictures as part of the problem solving process. Emphasis was placed on the recognition that there may be multiple ways to solve a problem and that problem solving strategies can be applied to new situations. As a culminating activity, students met with the school district’s Food Service Director to learn how these thinking strategies can be used to solve real problems encountered in food procurement and preparation. (Grades 3/4)

Number Systems – This math unit explored the development of number systems throughout human history including the Egyptian, Babylonian, Roman, Hindu-Arabic, Quinary, Binary, and Mayan systems. Students developed an understanding of the concepts of numerals as number symbols, as well as the principles that were used in conjunction with these symbols. We analyzed number systems to understand why some have survived into modern times while others have not. Students learned about measurement systems in ancient Egypt during a guided tour of the Field Museum’s ancient Egypt exhibit. (Grades 5/6)

Create a Culture – Students became anthropologists as they learned about the universal aspects that are part of all human cultures including family structure, power structure, living quarters, economic organization, education of the young, and language. They further developed their understanding by designing original societies and producing artifacts representative of their cultural traits. They had the opportunity to compare the diverse expression of universal culture traits by viewing numerous exhibits at the Field Museum of Natural History. (Grades 5/6)

A-Maze-Ing Shapes: We studied the properties of specific shapes and angles in this geometry unit. Students used straight edges, protractors and compasses to study the properties of specific shapes and angles. They then applied this knowledge by creating a-maze-ing mazes. This unit included a field trip to a nearby corn maze where we were able to analyze maze construction from the inside out. (Grades 5/6)

Comedy Writing – Participants in this unit became comedy scriptwriters. After analyzing the nature of humor and the components of familiar situation comedies, they created main and supporting characters, a setting, and a plot for their own situation comedies. Professional screenwriter and actress Kate Henley met with the GATE writers to share her experiences in the entertainment industry and to critique their ongoing work. (Grades 5/6)

Be an Inventor – Students engaged in deep levels of thinking in this unit that explored the stages of the inventing process. Participants were introduced to a technique known as Creative Problem Solving through which they found new uses for existing inventions, established the need for new inventions, developed inventions to fill those needs, and hypothesized possible inventions that known inventors might have created. They also created their own inventions from sets of specified cast-off materials. A field trip to view famous inventions at the Museum of Science and Industry was also part of this unit. (Grades 5/6)

Statistics: GATE students analyzed how statistics are used and misused to convey information in this interdisciplinary unit that combined math (measures of central tendency, percentages, graphic representation of data), critical analysis skills and debate in an interdisciplinary format. We examined print, electronic, and audio-visual examples of the use of statistics for informational and persuasive purposes and conducted a debate using statistical spin to promote opposing viewpoints. Burr Ridge Mayor Gary Grasso joined us as a special guest speaker on the topic of the use of statistics to influence local decision makers. (Grades 7/8)

Web Page Design – Students designed a GATE web page for the CCSD 180 web site. This unit was an introduction to computer programming because the web page was created using Hypertext Markup Language (HTML) rather than web page design software. Participants experimented with fonts, lists, tables, images, video editing and links to other web sites. The school district's Technology Director served as a consultant on this project. (Grades 7/8)

Architecture: Students planned, designed, and constructed a three dimensional scale model of a proposed addition to Burr Ridge Middle School as the culminating activity for this math unit. Our BRMS architects were first involved in a series of preliminary activities designed to apply math skills to determine area and perimeter, and draw and construct objects to scale and, in the process, learned to work as members of a project team. Mr. Dave Gassen of Wight Architects visited us, and the BRMS architects presented their design plans to the Board of Education. (Grades 7/8)

Science Fiction Writing – Students created future societies using the higher level thinking skills development technique known as Creative Problem Solving. They began by solving hypothetical, futuristic problems related to cloning, weightlessness, methods of travel, space colonies, robots, future foods, and distribution of food, energy sources, and environmental terrorism. These investigations provided background that assisted participants in the conception and writing of their own short science fiction stories. The unit included a field trip to view futuristic technologies on display at the Museum of Science and Industry. (Grades 7/8)

Archaeology – This unit engaged students in hands-on activities designed to provide an understanding of the nature of archaeology and scientific techniques for data collection, recording, and analysis. Hypothesis development was focused on with regard to the choice of archaeological sites and the interpretation of the artifacts, archaeological features, and ecological remains found at those sites. Students visited the Field Museum of Natural History to observe the way in which archaeologists catalog and display their finds in a museum setting. (Grades 7/8)

Polls – Students learned about polls, developed a questionnaire, conducted a scientific opinion poll, computed the results, and analyzed their findings. Emphasis was placed on learning how to spot bias to prevent it from emerging in the design of our own polls. The importance of polling in a democratic society (particularly in a presidential election year) was covered, including how polls can influence public opinion and serve as a catalyst for social action. Social science and statistics professionals from the University of Chicago’s National Opinion Research Center advised us regarding data collection and analysis during and following our field trip to the NORC’s Chicago loop telephone center. (Grades 7/8)

Etymology – Participants delved into the study of the evolution of written language and, in particular, the English language. Written communication systems studied included prehistoric cave paintings and petroglyphs, Sumerian cuneiform, Egyptian hieroglyphs, Old English, Middle English, Shakespearean English, and the divergence of American from British English. Students gained an understanding of the factors causing linguistic change, and created and communicated in their own planned language. (Grades 7/8)

Mystery Disease – This was an interdisciplinary problem based learning unit combining science, social studies, math, research, group collaboration, and communication skills. Students took on the role of public health officials to attempt to stop the spread of a mysterious disease. They examined evidence, made recommendations to save the lives of people who had contracted the disease, determined the most probable source of infection, and suggested steps to prevent the recurrence of a similar event. Unit participants also taught younger students about food borne illnesses and their prevention. The GATE “health officials” had a field trip to tour the DuPage County Health Department and meet with real county health professionals in the areas of environmental health, communicable diseases, and education. These same professionals later served as a board of review for student presentations of their findings and recommendations. (Grades 7/8)

Enrichment

Weekly enrichment sessions for identified grade 2 students in the areas of logic/thinking skills, poetry writing, and math

Poetry writing workshops for students selected by reading/language arts faculty in grades 3 through 8 with guest author Heidi B. Roemer

Field trip to museum of Science and Industry for GATE students in science fiction and inventions units included BRMS Science Olympiad participants

Forensic Science investigation in collaboration with Science Olympiad coaches for both GATE and Science Olympiad participants

