

**PARSIPPANY-TROY HILLS TOWNSHIP PUBLIC SCHOOL DISTRICT**

**GIFTED REACH OUT PROGRAM (GRO) GRADE 2**

**Authored by:** Stephanie Dasti and Laura Long

**Reviewed by:** Supervisor of K-5 STEAM, BSI, GRO - Annamarie Altomonte  
Assistant Superintendent for Curriculum and Instruction - Dr. Tali  
Axelrod

**Approval Date:** August 21, 2018

**Members of the Board of Education:**

Frank Neglia, President

Tim Berrios

George Blair

Andy Choffo

Joseph Cistaro

Alison Cogan

Matthew DeVitto

Susy Golderer

Judy Mayer

**Superintendent:** Dr. Barbara Sargent

**Parsippany-Troy Hills Township Public Schools**

**292 Parsippany Road Parsippany, NJ 07054**

**[www.pthsd.net](http://www.pthsd.net)**

## **I. OVERVIEW**

The purpose of the Gifted Reach Out Program (GRO) is to develop the problem solving, critical and creative thinking abilities of students identified as gifted. GRO is dedicated to developing the unique talents of second through fifth grade students building on the enriched activities in the kindergarten curriculum. The GRO curriculum is designed to create a collaborative environment where students become effective questioners and producers of knowledge. Separately, we assess students to gauge progress and inform instruction. Project based learning assessments for students in grades 2 through 5 are administered for each topic of study. Students will study topics related to Medieval Times and Math concepts. Each topic of study is designed to be a half year course.

## **II. RATIONALE**

The GRO Program serves the identified population of gifted students in grades two through five. This enrichment pullout program offers students the chance to interact with peers of similar ability, while remaining a part of the regular classroom setting. The interdisciplinary, differentiated curriculum for the students in GRO is intended to be high interest, while at the same time enhancing the present core curriculum. Issues arising from the units are relevant to our times, expose students to new subjects and broaden student interests. Activities are adjusted in pace and depth to meet the needs of the children in each group. GRO encourages independent learning, research, and individual product development. Creative problem solving and critical thinking skills are stressed. Students are challenged to become consumers and producers of knowledge.

## **III. STUDENT OUTCOMES (Link to New Jersey Student Learning Standards)**

In accordance with district policy as mandated by the New Jersey Administrative Code and the New Student Learning Standards, the following are proficiencies required for the successful completion of the above named course.

Students will:

1. Demonstrate growth in personal competence and dispositions for exceptional academic and creative productivity. These include self-awareness, self-advocacy, self-efficacy, confidence, motivation, resilience, independence, curiosity, and risk taking.
2. Interpret and apply evidence of mastery of the big ideas within a subject area: what they look like, and why they matter.
3. Generate new ideas, solve problems, and make decisions.
4. Apply a variety of thinking skills including, but not limited to, associative, metacognitive, abstract, and inferential thinking and deductive reasoning.
5. Create and present information in a variety of methods (oral, visual, written and technological) in order to share thoughts and ideas with others.
6. Translate a variety of concepts learned in the classroom into innovative outcomes.

7. Engage in self-reflection/assessment with respect to their interests, strengths, identities, leadership, and academic domains.
8. Develop the ability to sense a problem exists, define and analyze the problem, then determine, assess and evaluate possible solutions.
9. Exhibit self-reliance when working independently and respond effectively to unexpected experiences and challenges.
10. Utilize digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively to create communication and knowledge.
11. Apply knowledge of disciplines to produce work that reflects individuality and creativity at a more advanced level than their grade-level peers.
12. Develop products and outcomes that communicate expertise in multiple fields and disciplines (including technology) that may be presented to a variety of authentic audiences.
13. Display competence in interpersonal and technical communication skills: promote advanced oral and written skills, and creative expression; display fluency with technologies that support effective communication.
14. Demonstrate the importance of cooperation and individual acceptance within a group setting.

#### Links to NEW JERSEY STUDENT LEARNING STANDARDS

- [Visual and Performing Arts](#)
- [English Language Arts](#)
- [Mathematics](#)
- [Science](#)
- [Social Studies](#)
- [Technology](#)
- [21st Century Life and Careers](#)

#### Modifications/Differentiation and Adaptations:

For guidelines on how to modify and adapt curricula to best meet the needs of all students, instructional staff should refer to the [Curriculum Modifications and Adaptations](#) included as an Appendix in this curriculum. Instructional staff of students with Individualized Education Plans (IEPs) must adhere to the recommended modifications outlined in each individual plan.

#### IV. ESSENTIAL QUESTIONS AND CONTENT

##### **Overarching Essential Questions:**

- a) Medieval Times
  - a. What was life like during the Middle Ages?
  - b. Who were the people in Medieval Society and what was their culture?
  - c. **How is life today similar/different from life during the Middle Ages? (PBL Essential Question)**

b) Math Challenges

- a. How is math used in everyday life?
- b. How can we answer mathematical questions using strategies?
- c. **How can we apply game theory to create our own original math games? (PBL Essential Question)**

**Content:**

---

**A, Medieval Times**

- What is the period of time from approximately 500- 1500 AD?
- What are the components of a castle and why were castles built?
- What are the similarities and differences between lives of people in the middle ages versus today?
- What is the coat of arms and how does it represent the important aspects of a family?
- How did a boy become a knight?

**B, Math Challenges**

- Can you develop spatial sense using geometric proportions?
- How do you use deductive reasoning and process of elimination to solve a problem?
- How do you solve non-routine problems using mathematical concepts?
- How do you make and evaluate predictions based on empirical data?
- Can you create a math game including all elements essential to games?

V. **STRATEGIES**

- Project Based Learning
- Direct Instruction
- Differentiation
- Student projects
- Class/Group discussion
- Individual conferencing
- Presentations
- Thinkers

VI. **EVALUATION**

**Class Participation: 25%** - Participation in group discussions, attempting thinkers (Do Now Problem Solving Challenges), cooperative groups, presentations, being prepared for class.

**In Class Activities: 25%** - Journal entries, projects, quizzes, experiments, activity sheets

**Unit Project: 50%** - Project Based Learning Assessment (See Below)

(Proposed timeline. Timeline may vary depending on school schedules.)

***Medieval Times Project Based Learning Assessment***

Essential Question: How is life today similar/different from life during the Middle Ages?

Medieval Times PBL: [Linked Here](#)

**Plan and schedule:** After students spend time learning about various topics of medieval times, students will have 1-2 weeks to identify current day problems that are similar to/different than medieval times. For example, steel heavy armor worn in battle vs. uniform worn in war. Students will then have 3-4 weeks to design and create a story to reflect the current day problem by making a stained glass window to reflect the story. Students will have 1-2 weeks to provide a write up to go along with the stained glass window.

**Monitor progress:** Students need to check with the teacher no later than the end of each checkpoint to prove progress. Notes, sketches, brainstorming should be provided as necessary.

**Assess:** Rubric: [Linked Here](#)

**Evaluate:** Peer Assessment: [Linked Here](#) & Self Assessment: [Linked Here](#)

### ***Math Challenges Project Based Learning Assessment***

Essential Question: How can we apply game theory to create our own original math games?

Math Challenges PBL: [Linked Here](#)

**Plan and schedule:** After students have played various games and analyzed their components, it's time for them to make their own game. Students will have 4-6 weeks to design and create a math game. Student will then play each game.

**Monitor progress:** Students need to check with the teacher on a weekly basis to prove progress. Notes, sketches, brainstorming should be provided as necessary.

**Assess:** Rubric: [Linked Here](#)

**Evaluate:** Peer Assessment/Game Analysis [Linked Here](#) & Self Assessment: [Linked Here](#)

## VII. CORE RESOURCES

<https://www.state.nj.us/education/aps/cccs/gandt/>

New Jersey Department of Education Gifted and Talented Homepage

<http://www.nagc.org/resources-publications/resources>

National Association for Gifted and Talented resources

<https://www.nsgt.org/educational-resources/>

National Society for Gifted and Talented resources

## VIII. SUPPLEMENTAL RESOURCES

### **A. Medieval Times**

Bingham, J. (2004). The Usborne Internet-Linked Medieval World (S. McCaffrey, Illustrator).  
Usborne Books.

Carlson, L. (1998). Days of Knights and Damsels. Chicago Review Press.

Cox, P. R. (2002). What Were Castles For? (S. Stitt, Illustrator). Educational Development Corporation.

Daynes, K. (2005). See Inside Castles. Usborne.

Shepherd-Wundrow, D. (1996). Travels with a Troubadour: A Journey Through the Middle Ages (J. Finlay, Ed., L. Godfrey, Illustrator). Demco.

Sims, L. (2002). The Usborne Book of Castles (D. Groebner & S. Holmes, Illustrator). Usborne Books.

[http://www.castles.org/Kids\\_Section/Castle\\_Story/Index.htm](http://www.castles.org/Kids_Section/Castle_Story/Index.htm)

[http://www.bogglesworldesl.com/medieval\\_flashcards.htm](http://www.bogglesworldesl.com/medieval_flashcards.htm)

Medieval Flash Cards

<http://www.makeyourcoatofarms.com/>

Coat of Arms

## **B. Math Challenges**

Hopkins, Lee B. ((1999). Marvelous Math. New York: Scholastic.

Husted, Terri. (2003). Math Detective A1. Seaside, CA: The Critical Thinking Co.

Julius, Edward H. ((1995). Arithmetricks: 50 Easy ways to add, subtract, multiply and divide. New York: John Wiley and Sons, Inc.

Kajander, Ann. (1960). Big ideas for small mathematicians. Chicago: Zephyr Press.

Myller, Rolf. (1991). How Big Is a Foot? New York: Yearling.

Neuschwander, Cindy and Geehan, Wayne. (1997). Sir Cumference and the First Round Table. Watertown, MA: Charlesbridge.

Silbert, Jack. 1995). Math mysteries. New York: Scholastic.

<http://mathplayground.com/>

Various Math games

<http://www.shodor.org/interactivate/activities/RacingGameWithTwoDie/>

Racing Game with Two Number Cubes

<http://www.mathcats.com/crafts/stringart.html#top>

String Art

<http://www.mathsisfun.com/games/broken-calculator.html>

Math calculator

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=202>

Tessellations Creator

[http://www.caesl.org/toolkit/tools/Horse\\_Race.pdf](http://www.caesl.org/toolkit/tools/Horse_Race.pdf)

## IX. SCOPE AND SEQUENCE

### Second Grade Unit Planner [Linked Here](#)

#### A. Medieval Times (September-January)

#### 1. Recognize the period of time from approximately 500- 1500 AD as the Middle Ages.

Standards Covered: RI 2.1 RI 2.1 W 2.8 SL 2.1 SL 2.2 L 2.1 L 2.4 6.1.4.C.16

##### *Suggested Activities:*

- a. Compare and contrast inventions before, during, and after medieval times to help better understand the time period.
- b. Identify pictures from the middle ages and show a timeline.

##### Teacher Notes

- Interdisciplinary Connections: Reading Writing Speaking and Listening Social Studies
- Brainpop: Middle Ages and Feudalism
- Evaluation: Create a graphic organizer to show the difference between now and then.

#### 2. Identify the components of a castle and determine why castles were built.

Standards Covered: RL 2.2 RI 2.1 RI 2.10 RF 2.4 W 2.7 SL 2.2 SL 2.3 L 2.1 L 2.4. 8.1.2.A.5

##### *Suggested Activities:*

- a. Browse through books on the middle ages and websites to identify and interpret key elements of castles to reveals about how castle dwellers lived.
- b. Construct a drawing or a model of a castle.
- c. Virtually tour castles. Suggested: [http://www.castles.org/Kids\\_Section/Castle\\_Story/Index.htm](http://www.castles.org/Kids_Section/Castle_Story/Index.htm)  
<http://www.kidsonthenet.org.uk/castle/>

##### Teacher Notes

- Interdisciplinary Connections Connections Language Arts Speaking and Listening
- Evaluation: Castle Drawing/model including all items in the compiled list to demonstrate an understanding of the parts of a castle.

#### 3. Determine what a coat of arms was and how it represented important aspects of a family.

Standards Covered: RL 2.2 RL 2.3 RI 2.1 RI 2.3 SL 2.1 SL 2.2 8.1.2.A.5 1.1.2.D.1 1.1.2.D.2 1.2.2.A.2

##### *Suggested Activities:*

- a. Browse through books and websites to research coat of arms designs and meanings.
- b. Create a coat of arms.

##### Teacher Notes

- <http://www.makeyourcoatofarms.com/>
- Evaluation: Create an individual coat of arms

#### 4. Explain the steps to knighthood.

Standards Covered: RF 2.4 W 2.1 W 2.5 L 2.1 L 2.2 L 2.3 8.1.2.A.5

##### *Suggested Activities:*

- a. Read: Steps to Knighthood and The Knights Code of Chivalry and use this information to explain why you do or do not want to become a Knight.
- b. Recount and explain the stages of becoming a knight.
- c. Identify the parts of a suit of armor. (Labels, Simon Says, Dress a Knight)

## Teacher Notes

- Interdisciplinary Connections: Language Arts Writing Technology
- Can be used as an authentic assessment:
  - Steps to Knighthood: <http://library.thinkquest.org/J002767/index.htm>
  - Dress a Knight: <http://www.jetgames.com/knightinarmor.html>
- Evaluation: Write a persuasive piece defending why or why not it is desirable to become a knight Identify the stages to knighthood, or, write an acrostic KNIGHT poem reflecting knowledge learned

## **5. Compare and contrast the lives of people in the Middle Ages.**

**Standards Covered:** RI 2.2 RL 2.6 W 2.1 W 2.3 W 2.5 SL 2.1 L 2.1 L 2.2 L 2.3 6.1.4.A.1 1.1.2.D.1 1.1.2.D.2 1.2.2.A.2 1.3.2.D.1 1.3.2.D.3

### *Suggested Activities:*

- a. Discuss and role-play the daily life experience of a person who lived in the Middle Ages. AND/OR Develop a graphic organizer to compare and contrast the lives of people in medieval times to today. (Suggestion: Kidspiration)
- b. Create drawing(s)/model(s) of various roles represented during medieval times.
- c. Relate the game of chess to the feudal system. AND/OR Play and analyze the game of Nine Men's Morris to games played today.
- d. Understand stained glass windows told stories.
- e. Determine what story you want to tell and generate a picture to tell this story.
- f. PBL - create a stained glass window to communicate a story based on a topic researched throughout the unit. (See Evaluation Section for links to PBL)

## Teacher Notes

- Interdisciplinary Connections: Language Arts Writing Speaking and Listening Visual and Performing Arts
- Stained Glass may be made in a variety of ways such as with tissue paper, overhead transparencies, paint, technology
- Evaluation: Created stained-glass window to tell a story assessed by rubric

## **B. Math Challenges (February-June)**

### **1. Develop spatial sense using geometric proportions.**

**Standards Covered:** RL 2.3 RI 2.4 RL 3.2 2.G.A.1 1.2.2.A.2.4.OA.C.5 8.1.2.A.5 1.1.2.D.1 1.3D 8.1A 3.G.01 4.G.03

### *Suggested Activities:*

- a. Read Grandfather Tang's Story.
- b. Use tangrams to create their own shapes. create tangram story book.
- c. Read The Greedy Triangle.
- d. Play Shapes Up game.
- e. Generate an entire pentomino set of twelve using one-inch tile squares and pentomino rules.
- f. Create tessellations out of regular polygons by using paper and pencil or visiting online tessellation creator: [http://illuminations.nctm.org/Activity\\_Detail.aspx?ID=202](http://illuminations.nctm.org/Activity_Detail.aspx?ID=202)
- g. Compare symmetric and asymmetric objects.
- h. Create symmetry in art.

## Teacher Notes

- Interdisciplinary Connections: Reading Art Technology



- Differentiate shape expectation based on ability level
- Pentomino=five squares that touch along at least one whole side
- Evaluation: Create Tangram chart to show how many tangram pieces can be used to create a variety of shapes, Construct Pentomino set, Produce tessellation design or Create a symmetrical/asymmetrical design

## **2. Use deductive reasoning and process of elimination to solve a problem.**

**Standards Covered: W.2.1 SL 2.1 SL 2.4 8.1.2.A.5 5.1.4.A.2**

### *Suggested Activities:*

- Reason through Pico, Fermi, Bagels. (Use a number with three or more digits, you can use zero and repeating digits depending on ability level.)
- Online version: <http://www.picofermi.com/game/picogame.html>
- Explain your thought process as you solved your opponent's puzzle.
- Assemble "Bean Salads" based on given 'recipes'.

### Teacher Notes

- Interdisciplinary Connections: Writing Speaking and Listening Technology & Science
- Bagels = no correct digit
- Pico = 1 correct digit, incorrect place
- Fermi = 1 correct digit, correct place
- Bean Salad recipes
- Evaluation: Share strategy for game and compare the number of tries to correctly guess the number (aim for lower numbers) or Create your own bean salad recipe for a friend to make (Journal your opinion ...if you were a chef).

## **3. Solve non-routine problems using mathematical concepts.**

**Standards Covered: 8.1.2.A.5 9.1 L.2.1 L.2.4 2.OA.B.2 W.2.1**

### *Suggested Activities:*

- play a variety of Math games
- Use dominoes to create 'Magic Squares' in which all sides have the same spot-sum.
- Create the illusion of curves by producing line segments in a prescribed pattern. Choose a line pattern and follow it, making straight lines into parabolic curve. (patterns vary based on ability level)
- Create string art online and print out student chosen patterns.  
<http://www.mathcats.com/crafts/stringart.html#top>.
- Link calculator numbers to letters in order to create words.
- Use these words as solutions to student developed riddles.
- Access <http://www.mathsisfun.com/games/brokencalculator.html> to play Broken Calculator online game.
- Race a partner to solve problems: one with calculator one without... What method was faster? More accurate?

### Teacher Notes

- Interdisciplinary Connections: Language Arts Writing, Technology
- Parabolic curve may be completed on paper or using string.
- Evaluation: Demonstrate success at playing games & understanding of game concepts, Create a finished product (drawing or string art) with a curve or Generate calculator riddles and answers to be checked by other students.

#### **4. Make and evaluate predictions based on empirical data.**

##### **Standards Covered: SL.2.1**

##### *Suggested Activities:*

- a. Play Off to the Races game: roll two number cubes, record the sum, (sum will represent a horse) and use the results to predict which horse will win.
- b. For a grid to record results of rolls use: <http://www.shodor.org/interactivate/activities/RacingGameWithTwoDie/>

##### Teacher Notes

- Interdisciplinary Connections: Speaking and Listening Horse Race Activity  
[http://www.caesl.org/toolkit/tools/Horse\\_Race.pdf](http://www.caesl.org/toolkit/tools/Horse_Race.pdf)
- Evaluation: Make predictions based on class graph and then play again...determine if predictions are more accurate (anecdotal notes)

#### **5. Create a list of elements essential to all games in order to begin to create their own math game.**

##### **Standards Covered: SL.2.1 8.1.2.A.5**

##### *Suggested Activities:*

- a. Compare/contrast games played previously.
- b. List common elements. Visit website for online math game examples: <http://mathplayground.com/>
- c. PBL - Create an original Math Game. (See Evaluation Section for links to PBL)

##### Teacher Notes

- Interdisciplinary Connections: Speaking and Listening Technology
- Journal common elements needed to develop an effective game (Game Analysis [Linked Here](#))
- Evaluation: Create Math game assessed by rubric/peer game analysis.