Interdisciplinary Unit for 7th Grade: Theme: Patterns				
Enduring Understanding: Students will understand that patterns are everywhere in the world. Patterns create music, art, architecture, language, nature, and math. **Essential Questions:** What is a pattern? How do patterns help us understand our world? How can the use of patterns help us to be creative?				
Topic/Theme	**Subject 1** **Language Arts**	**Subject 2** **Math**	**Subject 3** **Music**	**Subject 4** **Science**
Whole Group	Introductory Lesson: PowerPoint presentation to introduce students to the sound patterns found in alliteration. LA Standard 5 Obj 3	Introductory Lesson: After reading *The Math* Curse by Jon Scieszka and Lane Smith, students will brainstorm patterns in math. Introduction to Phi.	Introductory Lesson: Play Mozart's Eine Kleine Nachtmusik for the class and point out the repeating patterns in the music. You may want to get more information from Mike May's published article "Did Mozart Use the Golden Section?" found at http://www.americanscientist.org/template/AssetDetail/assetid/24551	Introduce patterns in nature with discussion and use online camouflage game found at http://www.pbs.org/wgbh/nova/leopards/seeinggame.html
Use of Technology	Virtual Field Trip-Patterns in Poetry This field trip would take several days for students to complete and should be completed following the text-literacy lesson and Exploration Station 1. Teaches students about the basic elements of rhyme, rhythm and repetition and then has them apply them though examining and writing several different forms of poetry. Can be found at: http://www.uen.org/utahlink/tours/tourFames.cgi?tour_id=21012	In this geometry unit students will see some different types of 3-D drawings, and learn how to do these drawings. They also explore many interesting careers that use these techniques, from architecture to movies. http://mathforum.org/workshops/sum98/participants/sanders/	Students will compare Hip Hop music and the sonnet form found in Shakespeare's writings. See lesson plans at: http://artsedge.kennedy-center.org/content/3656/	WebQuest on Phi in Nature found at: http://www.webquest.org/questgarden/lessons/20708-060401135817/index.htm Students will complete the worksheets then present their assigned topic about Phi in Nature using PowerPoint.

Text-Literacy	Students will be placed in groups. Each group will have examples of a specific form of poetry (sonnet, pantoum, diamante, haiku, sestina, villanelle). Each group must discover the pattern used in their particular form of poetry. They will then write a detailed description of how to write that type of poetry. Groups will exchange their descriptions and, without looking at examples, see if they can create a poem in the correct form. The original group will help judge the products. Students will then be given copies of poetry in each form and decide what revisions they need to make so it is the correct use of the poetic form.	Building Background: Meets Math Standard 2, objective 1 and Math Connections 4(Explore historical and multicultural contributions to math). Students will select from 4 articles and read a biography of Leonardo Piscano Fibonacci. They will then write a framed paragraph summary which details the important contributions he made to mathematics.	Students will learn about and write a report on Fibonacci in Music. Information can be found at http://www.mcs.surrey.ac.uk/Personal/R.Knott/Fibonacci/fibInArt.html#music	Using a poetic form introduced in language arts class, create a poem relating to patterns in nature. Perhaps we could even invent our own form called "Phi Fie Poems": Each line would contain the following: 1 word 1 word 2 words 3 words 5 words 8 words 5 words 3 words 2 words 1 word 1 word Students could make it longer using the Fibonacci sequence if desired.
Exploration Station 1	Students look through newspapers, magazines, poetry anthologies, and websites to compile examples of alliteration, repetition, and rhythm	Students will learn how to make tessellations following the lesson plan found at: http://www.taospaint.com/Tessellation.html To further explore this topic, students will explore a Think Quest: M.C. Escher: Artist or Mathematician? http://library.advanced.org/11750/index.shtml	Compare and contrast various genres of music. Explore satellite radio. http://www.xmradio.com/	Introduce classification with the potato chip exercise found at: http://www.col-ed.org/cur/sci/sci143.txt Then create a basic classification system using plants or animals, either alive or pictures on a website. Lesson plans with links include: http://www.sciencenetlinks.com/lessons.cfm?DocID=231

Exploration Station 2	http://www.readwritethink.org/materials/diamante/ Interactive activity to guide students in writing their own diamante poem	Students will use patterns, relations, and functions to represent and analyze mathematical situations using algebraic symbols. http://www.uen.org/utahlink/activities/view_activity.cgi?activity_id=17229	http://artsedge.kennedy-center.org/content/2239/ This lesson explores the relationship between rhythm and math. Students are taught to subdivide when counting in order to be rhythmically accurate. This class is best taught in an instrumental music class.	Learn about patterns in animal migration. Have your students learn about Utah Bird migration from http://www.utahbirds.org This is especially relevant in April and September.