



Making Patterns with Music (1 & 2)

Focus Areas

Math, Technology, Visual Arts

Time Needed for Activity

60 minutes

Software

GarageBand

System Requirements

Macintosh

GarageBand is part of the iLife '06 package. The requirements that follow are for entire iLife '06 installation.

Macintosh G4

733 MHz or faster

OS 10.3.9 or higher

256 MB RAM; 512 MB recommended

10 GB hard disk space

DVD drive for installation

Supporting Software

iTunes

Thinkin' Things

Overall Objective

Children will gain experience in making mathematical patterns using music loops. Children will produce a series of repeating patterns and relate those musical patterns to ones created using other materials and symbols.

Activity Description

Children may work individually or in small groups to accomplish this activity. Children who are readers could follow simple written directions for using GarageBand. Other children should be guided through the process of launching the software, accessing the loop browser, listening to music loops, adding music loops to the music tracks, and creating a pattern of music. Note that with the creation of each new GarageBand episode the user is given the opportunity to name his/her product. If their work is to be saved, then the children should begin their work with a meaningful name. Allow time for children to experiment and become familiar with GarageBand. Ask them to use the music loops to create a specific pattern, such as an AB pattern. Suggest more complicated patterns. Encourage the children to share their musical patterns with their friends. The children could critique one another's efforts to match the pattern and, if necessary, offer suggestions about ways to change the current pattern to better match the requested one.

Children should be guided through the process of exporting their music to iTunes so that they can share the music with others. As the music is played, challenge the children to identify the pattern in the music sequence.

Once exported to iTunes, ask each child to select a favorite musical pattern from those created. Collect those musical compositions and burn the class's favorites to CDs, producing one for each child.

Learning Standards

Children will:

Use music loops to create distinct patterns and sequences.

Language Arts: Communication Skills

Math: Algebra; Communication; Connections; Representation

Social Studies: Individual Development and Identity

Technology: Creativity and Innovation; Communication and Collaboration; Critical Thinking, Problem-Solving, and Decision Making; Digital Citizenship, Technology Operations and Concepts

Experience a real-world use of mathematical patterns and sequences.

Language Arts: Communication Skills

Math: Algebra; Communication; Connections; Representation

Technology: Creativity and Innovation; Communication and Collaboration; Critical Thinking, Problem-Solving, and Decision Making; Technology Operations and Concepts

Understand that results of an activity vary among children.

Language Arts: Communication Skills; Communication Strategies

Social Studies: Time, Continuity, and Change; Individual Development and Identity

Technology: Digital Citizenship

Work individually or in small groups to complete a project.

Language Arts: Communication Skills

Social Studies: Civic Ideals and Practices

Technology: Creativity and Innovation; Communication and Collaboration; Critical Thinking, Problem-Solving, and Decision Making; Digital Citizenship, Technology Operations and Concepts

Additional Activities:

- After children have produced patterns, such as ABAB, AABAAB, ABBABB, using the music loops found in GarageBand, encourage them to expand and use multiple loops for each part of the pattern.

Notes

Additional Activities (cont'd)

- Combine patterns produced by the children as the score for an iMovie project.
 - Encourage children to create their own musical score and accompanying dances or movements. Provide digital video cameras to record performances. Import video into iMovie and create a class production.
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Resources

Books

- Kenyon, T. (1998). *Discovering patterns*. Brookfield, CT: Copper Beech Books.
- Koomen, M. (2001). *Patterns: What comes next?* Mankato, MN: Bridgestone Press.
- Krosoczka, J. (2005). *Punk farm*. New York: Random House.
- Moss, L. (1995). *Zin! zin! zin!: A violin*. New York: Simon & Schuster Books for Young Readers.
- Smoothey, M. (1993). *Number patterns*. New York: Marshall Cavendish.
- Smoothey, M. (1993). *Shape patterns*. New York: Marshall Cavendish.

Web sites for children

- <http://www.nyphilkids.org/main.phtml?>
- <http://www.creatingmusic.com/>
- <http://www.sfskids.org>
- <http://www.etch-a-sketch.com>
- <http://www.kids-space.org/HPT>

Web sites for families

- <http://www.nyphilkids.org/main.phtml?>
- <http://www.creatingmusic.com/>
- <http://www.sfskids.org>
- <http://www.surfnetkids.com>
- <http://www.kidsites.com>

Web sites for teachers

- http://www.apple.com/education/garageband/lesson_plans/
- <http://www.nyphilkids.org/main.phtml?>
- <http://www.creatingmusic.com/>
- <http://www.sfskids.org>
- <http://www.kidsites.com>