Patterns Project Description

TYPE: Individual (preferred)  WEIGHT = 15%  DUE DATE: Mar. 2
FORMAT: variable & presentation  LENGTH: 5 - 10 pages  MODULE: Patterns

Rationale:
Finding, exploring, and investigating patterns are the fundamental skills of almost all subject matter areas, including science, math, social studies, language arts, visual and dramatic arts, music, etc. Teaching young children about patterns through exploration and inquiry should be a major emphasis throughout the early years (and beyond). This project involves exploring and investigating patterns (e.g., metapatterns and other big conceptual patterns) that are common to the experiences of young children (and adults, too). The project is intended to help you develop a greater awareness of patterns in our world, as well as to help you develop the skills involved in finding, exploring, and inquiring into these patterns. However, the primary purpose is to see how exploring patterns can be a major focus for teaching.

This is an opened-ended assignment that is designed:

a. to encourage and value your creativity;
b. to help you develop the thinking skills of practicing teachers;
c. to provide an experience that allows you to construct your own understandings of the patterns you can include in your future classroom instruction.

Initial Recommendation:
READ the following resources for this project:

• Bloom – Appendix D & pp. 373—375
• Articles on the Exploring Science Site: http://elsci.coe.nau.edu/articles.php?cat_id=16

Description:
Your investigation may focus on one of the following:

• The patterns involved in a specific area of experience (e.g., playgrounds, stores, schools, etc.) or topic (e.g., animals, plants, archaeological ruins, etc.);
• A group of patterns applied to many different topics and/or areas of experiences (the patterns should interact or interrelate, as much as possible);
• An open exploration of patterns as you find, explore, and investigate them.

The essential elements of this project and of any work with patterns include:

• All of the patterns you explore and investigate involve specific functions and/or meanings. In the science standards, this aspect involves the notion of structure (or pattern) and function and conceptual meaning.
• Most patterns interact with or involve other patterns. These interactions and interrelationships are important in helping children (and us) develop more elaborate and complex understandings of our world.
• At a very basic level, similar patterns share the same basic functions and/or meanings wherever they appear (i.e., in different subject matters areas, types of experiences, contexts, etc.).
• In different contexts or subject matters areas, similar patterns also may have context- or subject matter-specific functions or meanings that may differ between contexts.
• These shared and different context-specific meanings are important (a) in helping children develop skills of **transferring knowledge**, (b) in helping children develop **more precise language skills**, and (c) in helping children **differentiate word meanings in different contexts**.

** This project should address each of the previous points.

**Requirements:**

• All examples of patterns used in your project should be photographed (digitally, if possible) or sketched, whenever possible. If photos or sketches are not possible due to the nature of the pattern, then the pattern should be described in detail. These **photos and sketches** and other visuals are important representations and must be included.

• **You must address**, in some way, **the points listed previously**: (a) interactions among the patterns, (b) structure or pattern -- and -- function or meanings, (c) shared meanings and/or functions across contexts (and subject matter areas), and (d) different context-specific functions and/or meanings.

• Your investigation **must include the context of science**. It also can include other contexts, such as, language arts, the arts, mathematics, et al.

• Include a section on **how your project can be adapted for use with children**.

**Project:**

Your project can be completed as:

• A “booklet” or paper that is type-written with embedded illustrations.
• A PowerPoint presentation with an accompanying paper.
• A movie with an accompanying paper.
• A dramatic performance with an accompanying paper.
• A multimedia presentation with an accompanying paper.
• Other modes of presentation may be possible, as well.

An “accompanying paper” may be necessary to address specific points (see “Requirements” above) that are not easy to present in certain types of projects.

All projects must be handed in on **paper** (if possible) and **electronically** (for possible publication on the Exploring Science Site).

**Paper:**

• The paper (either the complete project or the “paper portion”) should be **type-written, with embedded scanned or digitized images**.

• **Hand in:**
  • A printed copy.
  • An electronic copy, which can be emailed.
  • All projects will be **considered for publication** on the Exploring Science Site. These projects will be reviewed by others for quality and appropriateness.

**Project Presentation:**

• You will **present your project** to the class on the due date.
• You can use overheads, PowerPoint, and/or other visual media.