Early Childhood Thematic Explorations with STEAM Emphasis

Sharon M. Carver, Director
Carnegie Mellon University
Children’s School
www.psy.cmu.edu/cs

Children’s School Overview

- Psychology Laboratory School
  - Cognitive Developmental Research
  - Research Training
- Model Preschool & Kindergarten
  - Developmental Goals Shape Curriculum & Assessment / Thematic Units Build Knowledge
- Parent Education & Involvement
- Prof. Development for Practicing Educators
- Some Training of Pre-Service Teachers


Morning Overview

- Basic Children’s School Approaches
  - Six Domains of Developmental Objectives
  - NAEYC Content Areas for Curriculum
  - Extended Thematic Units of Study
  - Whole School Theme -> Family Festival
  - Organized, Efficient Documentation for NAEYC
  - Communication with Families
- Scavenger Hunt re: Building Unit Elements
  - Resources Utilized
  - Children’s Work Displayed
  - Content & Skill Building Evident

Afternoon Overview

- Scavenger Hunt Reflection / Q&A
- Depth, Breadth, and Extent of Theme Integration (e.g., Water, Healthy Mind & Body, Birds)
- Arts Unit Samples
  - Music Unit 2005 / 2009
  - Games Unit 2007
  - Art & Artists Unit 2008
  - Theater 2010
- Reflection & Evaluation

Developmental Objectives

- Continuum for Ages 3-5 re:
  - Self-Esteem & Independence
  - Interaction & Cooperation
  - Communication
  - Discovery & Exploration
  - Physical Capabilities
  - Artistic Expression & Appreciation

NAEYC Content Areas

- Curriculum for Ages 3-5 re:
  - 2.G.02a Life Science
  - 2.G.02b Earth Science
  - 2.G.02c Physical Science
  - 2.J.01 Appreciation of the Arts
  - 2.L.11 Social Studies, Geography, History
- Plus Physical, Language, Literacy, Math, Technology, Health & Safety
Why Thematic Units?

- Knowledge Building re: All Content Areas
  - Connections with prior knowledge launch the study
  - Conceptual foundations from discussion of quality non-fiction resources and children’s literature
  - Conceptual strengthening via songs, manipulatives, games, puzzles
  - Links among diverse explorations of the topic and related projects across multiple weeks
  - Expansion via home-school connections, special visitors, campus and community excursions, etc.

- Skill Building in all Developmental Domains
  - enhanced by deeper exploration, broader connections, repeated practice, application in varied contexts, opportunities to pursue interests

  - Self-Esteem & Independence
  - Interaction & Cooperation
  - Communication
  - Discovery & Exploration
  - Physical Capabilities
  - Artistic Expression & Appreciation

- Disposition Building for Lifelong Learning
  - Children as Explorers (initiative, risk-taking, focus, persistence, etc.)
  - Children as Authors (communication, explanation, etc.)
  - Children as Artists (creativity, appreciation, etc.)
  - Children as Caretakers (stewardship, conservation, etc.)
  - Children as Friends (cooperative, supportive, etc.)

How to Choose Topics?

- General topics unify by virtue of diversity
  - Building, Water, Birds, Games, Music, Art, Theatre, Healthy Mind & Body, Light & Color …
  - Everyone can identify with some types and learn to appreciate others
  - Children and families can share preferences, memories, and talents, while making meaningful connections

- Specialized topics broaden horizons
  - Author Study, Culture Study, Habitat Study …
Why Whole School Units?

• Community Connections - within the class, across the school, between home & school, between families, across campus, and within the city
• Cultural Connections - genuine opportunities for staff, children, and families to share experiences
• Historical Connections - authentic context for discussing changes across time and innovations, as well as emphasizing continuities and shared appreciation
• Conceptual Connections - threads throughout the year, across thematic units, in many aspects of life

How to Plan Thematic Units

• Unit Planning Template proactively align plans with NAEYC standards so doubles as classroom portfolio documentation (2.A.10)
  For Everyone
  – Key Conceptual Content & Vocabulary
  – Key Resources for All Ages
  – Theme Emphasis on the Playground / In Gym
  – Diversity Emphasis
  – Parent Involvement
  – University / Community Connections
  For each Age Group
  – Outline for Unit Content by Week / Plus Explicit Skill Emphasis
  – Focus Activities, Theme Emphasis in Existing Centers & Technology
  – Key Projects
  – Adaptations for Special Needs / Mixed Age Interactions
  – Breadth Check re: Goals / Assessments

How to Communicate with Families about Units?

• Theme List at the beginning of the year, with request for involvement
• For Whole School Unit, explanation of content & rationale, pointers for family activities & resources, etc. in School Newsletter throughout the year
• Quick Update from Classroom each day during the unit to promote timely family communication
• Classroom Unit Newsletter summarizes unit focus, activities, etc. at the end of the unit (about 1 week after culmination)

Building Unit 2014 (Coincidentally for All Ages)

• Conceptual Content – Resources, Centers, Activities, Displays, Technology, etc.
• Skill Building (See Building Basics Handout)
• Scavenger Hunt for Building Theme Elements

YOUR TURN to Observe & Explore!!

10:00 - 11:00 – Be sure to see 3's, 4's, Discovery Area & Kindergarten
11:00 - 11:30 – Snack & Discussion in the Office Area
11:30 – 12:30 – Extended Morning Circle Time & Activities

Questions? Comments?
Music Unit 2005 / 2009

- Unit Overview: The Plan in Relation to Content & Developmental Objectives
- Unit Implementation: The Reality
- Student Engagement & Learning
- Teacher Exploration & Impact
- Family Involvement & the Festival

Music Unit Overview

- 4 week Unit
  Basics of Sound
  Rhythm
  Percussion
  Latin, African, Reggae
  Melody
  Strings
  Classical, Jazz, Cajun/Zydeco
  Expression and Appreciation
  Winds
  Blues, Rock and Roll, Folk, Country, Other

Music Unit Overview

- Self-Esteem & Independence
  - Describe personal experiences with music
  - Describe types of music

Music Unit Overview

- Interaction & Cooperation
  - Share, take turns, and cooperate with peers on music-related activities and group projects

Music Unit Overview

- Communication
  - Identify and describe different styles of music and sounds of instruments
  - Learn new vocabulary
  - Begin reading music

Music Unit Overview

- Discovery & Exploration
  - Adapt movements to patterns discovered in music
  - Discuss the basics of how sound is produced
**Music Unit Overview**

**• Physical Capabilities**
  - Build instruments using fine motor skills
  - Strengthen large motor control

**• Artistic Expression & Appreciation**
  - Practice being an audience
  - Make your own music
  - Sing along with the group
  - Express music through other art media

---

**Music Unit Implementation**

**• Preschool 3’s**
  - Sound waves and vibrations
    - Colored water on a paper towel
    - Kazoos
  - Rhythm
    - Rhythm sticks
    - Allegro/Grave, Piano/Forte

**• Preschool 3’s**
  - Melody
    - Expression and Appreciation
      - Learning new songs
      - Musical visitors (4’s, parents, group from other campus school, professionals)

---

**Music Unit Implementation**

**• Preschool 4’s**
  - Sound and Rhythm
    - Traveling through vibrations
    - Homemade string bass, shakers, guitars and drums
    - Dalcroze method - moving and listening to music

**• Preschool 4’s**
  - Melody
    - Expression and Appreciation
      - Learning new songs
      - Performing as a guitar band for the 3’s
      - Listening to Blues, Classical and Rock and Roll Music
      - Notes on a staff - the language of music
**Music Unit Implementation**

- **Preschool Extended Day**
  - Music and Stories
    - Exploring Sound - Orchestranimals by Vlasta van Klampen
    - Xylophones, shakers and voice recordings
    - Exploring Musical instruments - Zin, Zin, A Violin by Lloyd Moss
      - Homemade sand blocks and tambourines

- **Exploring Music and Dance** - My Mama Had A Dancing Heart by Linda Moore Gray
  - Learning new dances, Creating Sound Headbands
  - Exploring Music and Stories - Abiyoyo by Pete Seeger
    - Listening to story songs, Shadow Puppets

**Student Engagement & Learning**

- Inspired some children to ask parents for own instruments and/or lessons
- More participation in singing
- Increased interest in making and using musical instruments

**Teacher Exploration & Learning**

- Gained greater comfort level with using music
- Inspired more use of music in the classroom every day and throughout the year

**Family Involvement & The Music Festival**

- Families and Community involved as musical guests
- Music-Themed Family Festival
Games Unit 2007

• Unit Overview: The Plan in Relation to Content & Developmental Objectives
• Unit Implementation: The Reality
• Student Engagement & Learning
• Teacher Exploration & Impact
• Family Involvement & the Festival

Games Unit Overview

• What is a Game? (vs. play, sport, etc.)
• Purpose of Games
  – Fun!
  • (enjoyment, amusement, entertainment, etc.)
  – Fitness!
  • (challenge to strengthen skills in all domains of development)
  – Friends!
  • (making friends, playing by the rules & getting along, etc.)

Games Unit Overview

• Who makes the rules?
  – Contrasting origins of versions, esp. re: culture
• What games can we invent?
  – Exploring the who, what, why, where, when & how to make new games fun & challenging
• How can we share our games with others?
  – Choosing favorites, finishing invented games, preparing for the festival

Games Unit Overview

• Self-Esteem & Independence
  – Showing pride
  – Sharing preferences & experiences
  – Coping with winning & losing

Games Unit Overview

• Interaction & Cooperation
  – Taking turns
  – Following directions and rules
  – Being a good sport

Games Unit Overview

• Communication
  – Learning new words for game play
  – Explaining game procedures
  – Recognizing letters, numerals and words
Games Unit Overview

• Discovery & Exploration
  – Observing and describing (e.g., I Spy)
  – Remembering rules, clues, etc.
  – Practicing game strategies

Games Unit Implementation

• Preschool 3’s
  – Starter Games (e.g., Snail’s Pace Race)
  – Invented Games for diverse centers (e.g., Reverse Jenga, Musical Dots)
  – Child Made “Go Teacher”

Games Unit Overview

• Physical Capabilities
  – Moving game pieces, throwing dice, etc.
  – Practicing sports movements
  – Improving coordination

Games Unit Implementation

• Preschool 4’s
  – Added Complexity (e.g., Don’t Break the Ice, Tic Tac Toe, Chutes & Ladders)
  – New Formats (e.g., computer games)
  – Child Made Dominos

Games Unit Implementation

• Preschool Extended Day (3’s & 4’s)
  – Used the “Frances” books as an extension & focused on street games (e.g., jump rope)
### Games Unit Implementation

- **Kindergarten**
  - Strategy Games (e.g., Checkers, Mancala)
  - Child Made versions of standard games, plus invented “Kindergarten Games” (dominos, matching, candyland, etc. with children’s faces)

### Student Engagement & Learning

- Welcome novelty and challenge during the winter months
- Diverse game options fit range of interests and skill levels
- Excitement re: sharing games with other children & families (home & school connect)
- Focused introduction to a range of developmentally appropriate games sets the stage for independent use all spring

### Teacher Exploration & Learning

- Reconnection with childhood game playing experiences (which impacts desire to share that with the class)
- Creativity re: inventing games for our context ("I Spy" mobile, sandbox, zoom photos)
- Appreciation for child capability & interest (which will translate into more game play throughout the year)

### Family Involvement & The Games Festival

- Sharing childhood & current family game playing experiences (quotes posted)
- Weekly Car Games
- Games Survey in entry way
- Festival Focus on Child Made Games, Teacher Made Games ("games" bingo, "games memory"), plus some other favorites

### Family Involvement & The Games Festival

- Art & Artists Unit 2008
  - Unit Overview: The Plan in Relation to Content & Developmental Objectives
  - Unit Implementation: The Reality
  - Student Engagement & Learning
  - Teacher Exploration & Impact
  - Family Involvement & the Festival
### Art & Artist Unit Overview

- **Seven Elements of Art**
  - Line, Color, Shape, Texture, Value, Form & Space
- **Types of Art**
  - Drawing, Painting, Print-Making, Collage, Sculpture, Ceramics, Textiles, etc.
- **Artists & Styles**
  - Each class chose a variety of artists for special focus, with emphasis on themes connecting with children’s interests and styles that children could emulate

- **Self-Esteem & Independence**
  - Showing pride in artwork
  - Emphasizing individual characteristics via self-portraits
  - Leading discussions of preferences & experiences as the Daily Art Helper

- **Interaction & Cooperation**
  - Sharing materials
  - Creating collaborative art projects
  - Respecting others’ preferences and styles

- **Communication**
  - Learning new words for art elements, names of artists and styles, etc.
  - Explaining art techniques
  - Discussing own art work with peers and adults

- **Discovery & Exploration**
  - Observing and describing elements in artwork
  - Experimenting with color mixing
  - Trying a variety of art techniques

- **Physical Capabilities**
  - Fine motor experience with varied art tools
  - Gross motor experience with large scale art projects (e.g., painting above your head like Michelangelo)
Art & Artist Unit Overview

• Artistic Expression & Appreciation
  – Creating artwork of varied types via individual and collaborative expression
  – Sharing and discussing peer and professional artwork in diverse contexts

Artist Unit Implementation

• Preschool 3’s
  – Chose 12 artists for focus, introducing one per day with a sample piece, with help from the Daily Art Helper
  – Introduced color mixing, sketching, self-portraits, sculpting with varied pliable materials,

• Preschool 4’s
  – Explorations of collage, mobiles, translucent art, blocks of color, and abstract combinations
  – Focused on Mondrian, Tiffany, Van Gogh, Matisse, and Caulder

• Preschool Extended Day (3’s & 4’s)
  – Used a variety of books to explore what it means “To Be an Artist”, specific artists (e.g., “Through Georgia’s Eyes”), and art techniques (e.g., “Mouse Paint”)
  – Launched a variety of explorations connected with each book

• Kindergarten
  – Explorations of wire sculpture, tissue paper collage, batik, and varied styles of painting (e.g., pointillism)
  – Focused on Michelangelo, Monet, Kandisky

Student Engagement & Learning

• Diverse artists and techniques piqued interests of a broad range of children
• Excitement re: noticing and discussing art & artists with families
• Focused introduction to the elements of art set the stage for experimenting with varied media and discussing artwork encountered throughout the year
Teacher Exploration & Learning

- Discovery of diverse artwork on our own campus that could be a focus for explorations and discussions
- Experimented with Art Museum Educator partnership
- Creativity re: developing developmentally appropriate art explorations
- Appreciation for child capability & interest regarding discussion of art elements and feelings about art

Family Involvement & The Art Festival

- Sharing family favorites re: pieces of art at home or in the community
- Monthly Art Opportunities suggested in the newsletter
- Festival Focus on individual and collaborative art experiences, together with art appreciation

Family Involvement & The Art Festival

- Sharing family favorites re: pieces of art at home or in the community
- Monthly Art Opportunities suggested in the newsletter
- Festival Focus on individual and collaborative art experiences, together with art appreciation

Theatre Arts Unit Inspiration

- May - Staff Discussion and Charades

Theatre Arts Planning

- August Leadership Team Mtg
- Representatives Attend Arts Workshop
- August Staff Seminar re: Creative Drama, including Interns

Theatre Arts Thread

- September through December
  - Parent Intro via orientation & newsletters
  - Brief weekly sessions with Interns
  - Primarily stories with movement
  - Some discussion of characters, voicing and emotion
  - Some sharing of personal roles in theatre
  - Challenge re: Theatre Professional ≠ Professional Educator
Theatre Arts Thread

• September through December
  – Additional Preschool Implementation
    • Dramatic play centers to fit topics
    • December Fairy Tales unit, starting with The Three Bears
  – Additional Kindergarten Implementation
    • Started reading about and discussing emotional expression

Theatre Arts Introduction

• December Kindergarten trip to see the Ellis School’s “Jungle Book” play
  – Salient Reference Point for children
    • Dynamics of being on stage re: facing audience, projecting voice, etc.
    • All girls playing all the roles is okay
    • Simple costumes & movements clearly communicating animals
  – Initiated Excitement for their own play

Theatre Arts Introduction

• January CMU Theatre Trips by Class
  – Detailed Intro to the many spaces, roles, etc.
    – Lobby, ticket booth, audience
    – Backstage, wings, flyspace, stage, orchestra pit
    – Prop and sound making, costume making
      • Things aren’t always what they seem
  – Dance & acting classes in studios
    • Not on stage until the end

Theatre Arts Unit – Feb 2010

• Classroom Arrangements for Stages, Props, etc.

Theatre Arts Unit - February

• Circle Time Discussions
  – Contrasting reading & acting
    – Terms & key concepts
    – Beginning / middle / end
    – Acting games (e.g., Humpty Dumpty)

Theatre Arts Unit - February

• Activity Time Explorations
  – Dramatic play with costumes & props
  – Puppet theatres and shadow screen
  – Kids on Stage (and other games)
  – Art & Writing centers to make costumes, props, sets, playbills
Theatre Arts Unit - February

• Special Guests
  – Dancer re: style & steps to fit the story
  – Musician re: music to fit the movement & mood, as well as sound effects

Family Theatre Arts Festival

• Family charades, puppets, shadow screen
• Children & siblings in costume & face paint center and on stage re-enacting stories and using the karaoke machine
• Videos of class enactments for viewing
• Professional “Barnyard Opera”

Theatre Arts Unit - February

• Extended Projects
  – Low key re-enactments with peers, videotaped for sharing with families
  – 3’s Peter & the Wolf, Billy Goats Gruff, etc.
  – 4’s Three Bears, Delicious, Wild Things
  – Kindergarten: Frog Prince

Theatre Arts Thread

• Two More Professional Performances in March (ABC Animals & Little Red Hen)

• Family Outing planned for May to the International Children’s Festival

Evidence of Learning

• Teachers Observations re: Developmental Objectives
  – Self-Esteem & Independence
    • Choosing re: character vs. backstage
    • Willingly accepting different parts
    • Managing emotions as parts are chosen
    • Confidently performing for others
    • Independently managing costumes

• Teachers Observations re: Developmental Objectives
  – Interaction & Cooperation
    • Turn-taking re: roles and actor vs. audience
    • Interacting with other characters during enactments
    • Negotiating compromises re: performances
    • Encouraging each other during rehearsals & performances
    • Directing others in the context of a performance
Evidence of Learning

• Teachers Observations re: Developmental Objectives
  – Communication
    • Using new vocabulary
    • Altering voice to express emotion
    • Articulating clearly & projecting
    • Sequencing story elements for retelling
    • Memorizing lines
    • Writing bios, playbills, etc.

• Teachers Observations re: Developmental Objectives
  – Discovery & Exploration
    • Comparing & contrasting re: stories, enactment, etc.
    • Experimenting with voices, sound effects, etc.
    • Planning multiple aspects of a performance and gathering or creating necessary materials (e.g., advertising, money for buying tickets & refreshments, etc.
    • Using technology tools for sound effects, recording, production, etc.

• Teachers Observations re: Developmental Objectives
  – Physical Capabilities
    • Moving with control and appropriate timing
    • Expressing emotions via face & body movements
    • Using eye-hand coordination to create props & costumes

• Teachers Observations re: Developmental Objectives
  – Artistic Expression & Appreciation
    • Designing props, sets, and costumes
    • Developing child-created stories
    • Illustrating scenes & creating original sets
    • Practicing respectful audience behavior

Evidence of Learning

• Performer Observations of Our Children
  – Excellent audience skills
  – Integration of theatre arts vocabulary (e.g., character, actors, etc.
  – Frequency of quality observations, questions, and suggestions
  – Strong memory for sequence and story
  – Understanding re: actors playing multiple roles, props not being what they seem, music and movement fitting the story, etc.

• Natural Integration of Theatre Arts in Play
  – Dramatic play & Playground enactment planning (esp. K)
  – Peer coaching (e.g., “Neely, never turn your back to the audience.”)
  – Response to impromptu song recording request, esp. re: planning for an audience