Bright IDEA Curriculum Units Table of Contents

Revisions - Lenoir

Project Bright IDEA 2: Interest Development Early Abilities

A Jacob Javits Gifted Education Program
Funded by the US Department of Education
2004-2009

Concept: Survival

Topic: Wants and Needs

Norma Tyndall-Lenoir County
Audra Penrod-Moore County

K-2

North Carolina Department of Public Instruction
Exceptional Children Division
Academically or Intellectually Gifted Program

The American Association For Gifted Children at Duke University

Big Ideas Manifested

Topic - Survival

Literature Selection – *Harvesting Hope*
Author – Kathleen Krull

Concepts	Themes
• Culture • Change • Conflict • Force or influence • Power • Systems • Migration • Survival	• Controversy • Self-sacrifice • Rebellion • Struggle • Migrant workers
Issues or Debates	**Problems or Challenges**
• Poor vs. wealthy • Truth vs. violence • Imagination vs. powerless • Man vs. Man	• Drought – no water for crops; no money to pay Bills • Poverty • New life as migrant workers • Unfair working conditions • Overwhelming odds
Processes	**Theories**
• Problem solving • Decision making • Courage • Humility • Determination • Persistence	• Peaceful dedication to a cause is more effective than force • In a fight for justice truth is a better weapon than violence • In victory, there must be humility • One man can make a difference • Stand up for what you believe in
Paradoxes	**Assumptions or Perspectives**
• Man's inhumanity to man	• Patience and determination without violence wins battles

Concept – Survival Topic – Wants and Needs

Suggested Literature Selection(s) – *Harvesting Hope* by Kathleen Krull

Look and Listen for…

Intelligent Behaviors

Story Focus: Posing Questions, Responsible Risk, Persisting

Student Activities: Metacognition, Posing Questions, Thinking Flexibly, Responsible Risks

Thinking Skills Focus – Thinking Skills Books
Chapter 7 Verbal Sequences

Topic Focus – Wants and Needs

Concept Focus – Wants and needs affect survival

Overarching Generalizations –
- Nature is essential to survive.
- Basic needs must be addressed for survival.
- We may or may not have to adapt in order to survive.

More Complex Generalizations –
- Relationships may be necessary in order to survive.
- Change may be necessary in order to survive.
- Systems may or may not be interdependent upon one another to survive.

Directions for Teachers
Display sentence strips with the generalizations. Discuss topics and vocabulary words needed to gain a deeper understanding of the conceptual lessons.

Suggested Topics for Discussion
needs vs. wants, poor vs. wealthy, man vs. man, man vs. environment, peaceful protest vs. violence

Suggested Vocabulary Words for Discussion
Fiesta, swarmed, adobe house, conflicts, drought, possessions, vanished, migrants, filthy, embarrassed, suspicious, reluctantly, weapon, abandoned, obstacle, unbearable, contract, announcement, humility

Vocabulary Extension
Discuss the meaning of the above vocabulary words using a word/match card game.

Hooks
Gather information on how to survive in unique situations. Each student selects a "Luck of the Draw" card displaying one situation. Students create a step sheet of what to do in the selected situation.
Select a generalization(s) and essential questions. Introduce one or more of the following topics:

Six Facets of Understanding

Facet 1 – EXPLANATION
Generalization: Basic needs must be addressed for survival **EQ:** How do our needs affect survival? How is nature connected to survival? What do you need in order to survive? Brainstorm a list of essential needs.
Facet 2 – INTERPRETATION
Generalization: Basic needs must be addressed for survival **EQ:** How do our needs effect survival? Find pictures in magazines that relate to survival. Create a class collage using the pictures. Write a story about how these pictures help you survive.
Facet 3 – APPLICATION
Generalization: Relationships may be necessary in order to survive. **EQ:** How do relationships help us survive? Children in groups of four will choose four relationships and create a survival poster that expresses relationships that help us survive. Display the posters and have students go around the room to collect data from the posters. Students will then write a two sentence summary about how relationships are necessary for survival based on the evidence.
Facet 4 – PERSPECTIVE
Generalization: Change may be necessary in order to survive **EQ:** How do people's wants and needs change based on the need to survive. Compare and contrast the needs of Cesar Chavey's community to the needs of our community from the perspective of a leader. Create a Venn diagram to show your comparison.
Facet 5 – EMPATHY
Generalization: We may or may not have to adapt in order to survive. **EQ:** How does adaptation effect survival? If you lost everything in a house fire like the main character in the book, *A Chair for My Mother*, would you have to change and adapt in order to survive? Support your answer.
Facet 6 – SELF-KNOWLEDGE
Generalization: Basic needs must be addressed for survival **EQ:** How do you assess your needs? Write in your Journal in response to the question "What needs would you not sacrifice in order to survive?" and justify your thoughts. How are your views about survival shaped by family, school, and community?

Read: *Harvesting Hope* by Kathleen Krull

Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Research an animal of your choice and tell how that animal survives in nature. Write a report to demonstrate how your animal survives. **V__L*_S__M__B__P_*_I_*_N__**	**Interpersonal Learner (B)** **Sensing-Thinking** How might you feel if you lost all of your possessions? What would you do to adapt and survive? **V_*_L__S__M__B__P_*_I__N__**
Understanding Learner (C) **Intuitive-Thinking** Compare and contrast two survival situations using a Venn diagram. For example, your house catches on fire and you get separated from your mother on a shopping trip. **V*_L_*_S_*_M__B__P__I_*_N_*_**	**Self-Expressive Learner (D)** **Intuitive-Feeling** A drought has occurred and your community has asked you to help people survive this situation. Create and perform a rain dance to help end the drought. **V_*_L__S_*_M*__B_*_P_*_I__N_*_**

Real World Connections With Products
Application (produce, plan, develop, investigate, create, compare, innovate, cultivate)

Real World Applications
Migrant worker, president of local business association, agriculturalist, contract mediator

Real World Terms
Migrant worker, contract, farming, agriculture, cultivate, irrigation

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations –
- Nature is essential to survive.
- Basic needs must be addressed for survival.
- We may or may not have to adapt in order to survive.

More Complex Generalizations –
- Relationships may be necessary in order to survive.
- Change may be necessary in order to survive.
- Systems may or may not be interdependent upon one another to survive.

How do the Intelligent Behaviors help migrant workers, union representatives, etc. survive in their relationship together?

How do the Intelligent Behaviors meet needs in order to survive?

Materials Needed for Task Rotation and/or Task Rotation Menu

- book Harvesting Hope
- index cards
- paper
- crayons
- markers

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

- How may nature be essential?
- How are our basic needs for survival important?
- How do our needs change over time?
- Do we have to adapt in order to survive? How?
- How do we adapt to our environment in order to survive?
- How are relationships important in survival?
- How were relationships important in relation to the story?
- How are relationships in our lives important in survival?
- How were the characters in the story interdependent on each other?
- How are we interdependent on each other for survival in our own lives?

Intelligent Behaviors

- What Intelligent Behaviors did the characters in the story demonstrate?
- How did you use these or other Intelligent Behaviors in completing the task rotation activities from the unit of study?
- How do you demonstrate these Intelligent Behaviors daily?
- What Intelligent Behaviors did you see as your strength in these activities? Why?
- What Intelligent Behaviors do you think you would like to work on developing in the next unit of study?
- What indicators do you think would be a good focus for you on your next task rotation activities?
- How did Cesar Chavez demonstrate the following Intelligent Behaviors in the story:
    - Being persistent
    - Thinking flexibly
    - Metacognition
    - Taking responsible risks
- How do you demonstrate the following Intelligent Behaviors:
    - Being persistent
    - Thinking flexibly
    - Metacognition
    - Taking responsible risks

Literary Perspective

1. How did Cesar and his family change in order to survive?
2. Which relationships were important to the character's survival in the story?
3. How are the situations of survival related to the situations in your own life?
4. How might you feel if you lost all of your possessions? What would you do to adapt and survive?
5. In what ways can you relate survival in Harvesting Hope to anther book?

Student/Teacher Reflections

Math Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Demonstrate value of money in a store setting by purchasing an item (candy, pencils, etc.) with earned play money. **V_*_L_*_S__M__B_*_P_*_I _*_N__**	**Interpersonal Learner (B)** **Sensing-Thinking** How might you feel if you lost all of your possessions? What would you do to adapt and survive? **V__L__S__M__B__P_*_I__N__**
Understanding Learner (C) **Intuitive-Thinking** Use old magazines to cut out pictures of needs and wants. Analyze them according to needs and wants. **V__L_*_S_*_M__B_*_P__I__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Create a collage, visual symbol, or icon to express an idea related to survival. **V__L_*_S__M__B_*_P__I_*_N__**

Real World Connections With Products
Application (produce, plan, develop, investigate, create, compare, innovate, cultivate)

Real World Applications
Migrant worker, president of local business association, agriculturalist, contract mediator

Real World Terms
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Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations –
- Nature is essential to survive.
- Basic needs must be addressed for survival.
- We may or may not have to adapt in order to survive.

More Complex Generalizations –
- Relationships may be necessary in order to survive.
- Change may be necessary in order to survive.
- Systems may or may not be interdependent upon one another to survive.

How do the Intelligent Behaviors help migrant workers, union representatives, etc. survive in their relationship together?

How do the Intelligent Behaviors meet needs in order to survive?

How do the Intelligent Behaviors you use in math meet needs in order to survive?

Materials Needed for Task Rotation and/or Task Rotation Menu

- index cards
- paper
- crayons
- markers
- paper towel rolls
- glue
- ribbon
- buttons
- yarn
- empty plastic bottles
- popsicle sticks
- paper plates/cups
- straws
- pipe cleaners

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

- How may math skills be essential for survival?
- How are our basic needs for math important for survival?
- How do our math needs change over time?
- Are math skills important to our survival? Why or why not?

Intelligent Behaviors

- What Intelligent Behaviors did you use while completing the math activities?
- How did you use these or other Intelligent Behaviors in completing the task rotation activities from the unit of study?
- How do you demonstrate these Intelligent Behaviors daily?
- What Intelligent Behaviors did you see as your strength in these activities? Why?
- What Intelligent Behaviors do you think you would like to work on developing in the next unit of study?
- What indicators do you think would be a good focus for you on your next task rotation activities?
- How do you demonstrate the following Intelligent Behaviors:
    - Being persistent
    - Thinking flexibly
    - Metacognition
    - Taking responsible risks

Literary Perspective

- Which math skills do you think Cesar needed in order to survive?

Student/Teacher Reflections

Concept: Survival
Topic: Wants and Needs

Generalizations:

Overarching Generalizations –

- Nature is essential to survive.
- Basic needs must be addressed for survival.
- We may or may not have to adapt in order to survive.

More Complex Generalizations –

- Relationships may be necessary in order to survive.
- Change may be necessary in order to survive.
- Systems may or may not be interdependent upon one another to survive.

Essential Question:
How are our wants and needs essential to survival?

Task Rotation Menu

Level	Mastery	Understanding	Self-Expressive	Interpersonal
1	In a small group, list things we need to survive.	Use old magazines to cut out pictures of needs and wants. Display them according to needs and wants.	Brainstorm how you would survive without money.	Write a letter to a friend telling them about 5 strategies you would utilize to survive in school.
2	Gather information on how to survive in unique situations. Each student selects a "Luck of the Draw" card displaying one situation. Students create a step sheet of what to do in the selected situation.	Compare and contrast two survival situations using a Venn diagram. For example, your house catches on fire and you get separated from your mother on a shopping trip.	A drought has occurred and your community has asked you to help people survive this situation. Create and perform a rain dance to help end the drought.	How might you feel if you lost all of your possessions? What would you do to adapt and survive?
3	Develop a "How To Book" on how to survive on a field trip.	After reading a short situation, analyze alternatives for making a decision on how to survive.	Create a collage, visual symbol, or icon to express an idea related to survival.	Create a community action plan to help a community survive during difficult times.

Math Task Rotation Menu

Level	Mastery	Understanding	Self-Expressive	Interpersonal
1	Recognize pennies and dimes by playing Money Hokey Pokey.	Use old magazines to cut out pictures of needs and wants. Analyze them according to needs and wants.	Create a collage to express an idea related to survival.	Your mother gave you 30C for snack, tell how you feel if you lost your money.
2	Using a T chart, categorize pennies with one and dimes with tens.	Using old magazines cut out pictures of needs and wants. Explain your reasoning why for each.	Design a visual symbol or icon to express an idea related to survival.	Empathize with Chavez how he might have felt when he lost his possessions. Tell how you would feel if you were Chavez.

3	Demonstrate value of money in a store setting by purchasing an item (candy, pencils, etc.) with earned play money.	Choose one picture of a need or want and weigh evidence as to its classification.	Interpret math symbols $ and c for survival.	Two disasters have occurred in your community. One is the local school has burned down and the other is the local park has recently been flooded. Judge which project needs the greatest help and design a plan of action to help.

Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking**	**Interpersonal Learner (B)** **Sensing-Thinking**
Develop a "How To Book" on how to survive on a field trip.	Write a letter to a friend telling them about 5 strategies you would utilize to survive in school.

V__L__S__M__B*__P__I_*_N__	**V_*_L_*_S__M__B__P_*_I__N__**
Understanding Learner (C) **Intuitive-Thinking** Use old magazines to cut out pictures of needs and wants. Display them according to needs and wants. **V__L*__S_*_M__B_*_P__I__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Create a collage, visual symbol, or icon to express an idea related to survival. **V__L__S*__M__B*__P_*_I_*_N__**

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MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives
- How may math skills be essential for survival?
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- How do our math needs change over time?
- Are math skills important to our survival? Why or why not?

Intelligent Behaviors
- What Intelligent Behaviors did you use while completing the math activities?
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- How do you demonstrate these Intelligent Behaviors daily?
- What Intelligent Behaviors did you see as your strength in these activities? Why?
- What Intelligent Behaviors do you think you would like to work on developing in the next unit of study?

- What indicators do you think would be a good focus for you on your next task rotation activities?
- How do you demonstrate the following Intelligent Behaviors:
    - Being persistent
    - Thinking flexibly
    - Metacognition
    - Taking responsible risks
    - How did you use your Intelligent Behaviors to complete the assessments?

Literary Perspective

- How can you relate survival in Harvesting Hope with another piece of literature?

Student/Teacher Reflections

Math Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

EQ: Are math skills necessary in order to meet our needs for survival?

Mastery Learner (A) **Sensing- Thinking**	**Interpersonal Learner (B)** **Sensing-Thinking**
Create a vertical 2 column table with 7 blocks across on each row. Make cards displaying numbers 1 through 7. Make another set of cards displaying counting by 10's from 10 to 70. On the first day of the week, you earned 10c. How much money will you earn in 7 days? Use your cards to create a chart displaying your information.	In your math journal, write a reflection about money. How is money a need to your survival? Why ways does your family use money to survive?

V__L_*S_*M__B_*P__I__N__	**V__L_*S__M__B__P__I_*N__**
Understanding Learner (C) **Intuitive-Thinking** In the story, Harvesting Hope, Cesar's family earned only 30c a day. They wanted to earn enough money to buy their ranch back. Imagine you only earn 10c a day. Choose a toy from the stack of picture cards. Decide how many days it will take you to earn enough money to buy your toy? **V__L_*S_*M__B*__P__I__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** With a partner, invent a machine that could help you solve math problems in the real world. How will this invention help you to survive? **V__L*__S__M__B*__P__I*__N__**

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(Whole Group)

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    - Taking responsible risks

Literary Perspective

- Which math skills do you think Cesar needed in order to survive?

Student/Teacher Reflections

Additional Support Materials

Favorite Read-Alouds

The Rag Coat by Lauren Mills

Love You Forever by Robert Munsch

McGraw Hill: Here I Am, Adventures in Time and Place

Goldilocks and The Three Bears

Cherry, Lynne.
The Great Kapok Tree: Tale of the Amazon Rain Forest. Voyager Books, 2000.

Penny, Malcolm.
Our Environment. Raintree/Steck Vaughn, 1999.

Title: The Trail on Which They Wept, The Story of a Cherokee Girl by Dorothy and Thomas Hoobler with pictures by S. S. Burrus (Silver Burdett Press, Morristown, NJ, 1992)

Title: Sweet Clara and the Freedom Quilt by Deborah Hopkinson with illustrations by James Ransome (Alfred A. Knopf, New York, NY, 1993)

Title: Sarah, Plain and Tall by Patricia MacLachlan, (A Charlotte Zolotow Book, Harper Collins Publishers, New York, NY, 1985)

Title: Apple Picking Time

Two Tickets To Freedom by Florence B. Freedman, (Scholastic Inc., New York, 1971**)**
Piggy Pie by: by: Margie Palatini

Finger Plays, Nursery Rhymes and Songs

http://www.songsforteaching.com/tomgriffith/fundamentalneeds.htm
http://www.songsforteaching.com/hood/environmentchange.htm
http://www.songsforteaching.com/tomgriffith/fundamentalneeds.htm

Video Clips

Paintings & Prints

Teacher Reflections

Literary Selection

Date **School** **Grade**

1. What were the strengths of the task rotations and/or other activities?

2. How did the task rotations and/or activities reveal students' Intelligent Behaviors? Please discuss how each Intelligent Behavior manifested it self.

3. What would you change or add the next time you taught this lesson?

4. What opportunities for growth does the resource unit have?

5. What were "ah ha's?" for the students? For teachers?

"Additional Comments

APPENDIX

A

Additional Instructional Concept-Based Activities

Games and activities on line for Wants and Needs

http://newlearning.njcu.edu/online/students/publish/barrett/wants_needs.html

http://www.mcwdn.org/ECONOMICS/NeedWant.html

http://cte.jhu.edu/techacademy/fellows/Medvetz/webquest/index.html#task

http://www.tgmag.ca/rights/sec1_e.html

http://www.tgmag.ca/rights/wants1_e.html

http://www.sjcisd.org/GRANTS/lesson_plans_TL_Challenge.htm

http://www.actf.com.au/

www.oswego.org

http://www.educatorskonnect.com/CurriculumPortals/Communities/NeedsWants/NeedsWants.html

http://www.southampton.k12.ny.us/thirdgradeecon/needs_and_wants.htm

http://www.therightssite.org.uk/html/rights_wan.htm

Project Bright IDEA 2: Interest Development Early Abilities

A Jacob Javits Gifted Education Program
Funded by the US Department of Education
2004-2009

Concept: Exploration

Topic: Culture and Tradition

By: Cindy Davis-Moore County
Juanita Sutton- Lenoir County

K-2

North Carolina Department of Public Instruction
Exceptional Children Division
Academically or Intellectually Gifted Program

The American Association For Gifted Children at Duke University

Big Ideas Manifested

Topic - Culture and Tradition
Literature Selection – Molasses Man
Author - Kathy L. May

Concepts	**Themes**
• **Traditions** • **Culture** • **Production** • **Interdependence**	• **Value of tradition** • **Family as a community**
Issues or Debates	**Problems or Challenges**
• Modern technology vs. old time traditions	• **How to carry on family/cultural traditions**
Processes	**Theories**
• **Inquiry**	• Survival of the fittest/best • Necessity is the mother of invention • Hard work done well will have sweet rewards
Paradoxes	**Assumptions or Perspectives**
• Everything old is new again • The hardest work brings simple pleasures	• Some pleasures from the old days are disappearing from the modern world

Concept - Exploration Topic – Culture & Tradition

Suggested Literature Selection(s) – Molasses Man By: Kathy L. May

Look and Listen for…

Intelligent Behaviors

Story Focus

Metacognition, continuous learning, persisting, applying past knowledge to new situations

Student Activities

Remaining open to continuous learning, applying past knowledge to new situations, metacognition, responding with wonderment and awe

Thinking Skills Focus - Building Thinking Skills by: Parks and Black

Topic Focus -Culture and Tradition

Concept Focus - Exploration

Overarching Generalizations - Exploration of culture and traditions confronts the unknown through new discoveries and validates prior knowledge.

More Complex Generalizations -

- Exploration provides opportunities for students to value family traditions.
- Exploration requires recognizing purpose and responding to it.
- Exploration is inclusive of values and traditions.
- Community support is important in continuing traditions.

Directions for Teachers

Display sentence strips with the generalizations. Discuss topics and vocabulary words needed to gain a deeper understanding of the conceptual lessons.

Suggested Topics for Discussion

Tradition
Community

Suggested Vocabulary Words for Discussion

Sorghum cane, molasses, shallow, ladles, skimmers, furnace, kindling, skim,
Vocabulary Extension

Hooks
Select a generalization(s) and essential questions. Introduce one or more of the following topics:

Six Facets of Understanding

Facet 1 – EXPLANATION
Generalization: Exploration requires recognizing purpose and responding to it. **E.Q.: How can you create a product that represents a cultural tradition?** **As a class brainstorm a list of local cultural traditions. Each student will choose his/her favorite from the list. Then, given a choice of craft supplies each student will create a representation of the tradition they chose. Students will share their final product with the class.**
Facet 2 - INTERPRETATION
Generalization: Exploration provides opportunities for students to value family traditions. **E.Q.: How can you illustrate a favorite or familiar custom?** **The students will create an illustration of a favorite or familiar custom. Example: Native American/ Pilgrims/ Thanksgiving.**
Facet 3 - APPLICATION
Generalization: Exploration is inclusive of values and traditions. **E.Q.: What customs and traditions will be included in a yearly timeline?** **Students will work together to design a timeline that include customs / traditions that are often celebrated in our culture.**
Facet 4 - PERSPECTIVE
Generalization: Exploration provides opportunities for students to value family traditions. **E.Q. What are some similarities and differences of your favorite tradition compared to that of your partner?** **Think-Pair-Share** **Students will work together with a partner to complete a Double Bubble Map that compares and contrasts their favorite tradition.**
Facet 5 – EMPATHY
Generalization: Exploration requires recognizing purpose and responding to it. **E.Q.: How can you take on the role of an object that represents our culture and traditions?**

Students will draw a card from a basket with a given object written on it that represents a custom or tradition. Students will write clues about the objects. They will read their clues out loud so that their classmates can guess which object they are or which tradition they represent.
Example: I am round. I am hidden in the grass. Sometimes I have goodies inside of me. I hope you find me. What am I?

Facet 6 – SELF-KNOWLEDGE

Generalization: Community support is important in continuing traditions.
E.Q.: What traditions are observed/valued in your community?

Students will reflect through personal narratives their understanding of the values of traditions in their community.

Read: Molasses Man by: Kathy L. May

Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** **E.Q.: How can you convince the newspaper that your tradition of making molasses is worthwhile of being passed on?** Pretend you are the grandson in the story. Write a letter to the editor of your local newspaper telling why the tradition of making molasses is important and how and why it should be carried on. **V*__L__S__M__B__P*__I*__N__**	**Interpersonal Learner (B)** **Sensing-Thinking** **E.Q.: How can you represent the story Molasses Man through illustrations?** Divide the class into three groups. Each group will create a poster representing either beginning, middle, or end of the story. How are the emotions that the grandson experiences in the story similar to any emotions that you have experienced in a similar situation? **V__L__S*__M__B__P*__I__N*__**
Understanding Learner (C) **Intuitive-Thinking** E.Q.: How is molasses produced today? Students will use the internet to research how molasses is made today. They will write a short report on their findings. What are some differences that were noted in today's production vs. that of long ago? Resources: www monitorsugar.com www.mtnlaurel.com **V*__L__S__M__B__P__I*__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** E.Q.: What product could you invent that would serve the same purpose as molasses? Imagine that there is no more molasses in the world. Create a substitute product that would be used for the same purpose. How would you market and sell your product? **V*__L*__S*__M__B__P*__I*__N__**

Real World Connections With Products
Application (producer, sells, teaches, plans, draws, invents)

Real World Applications
Entrepreneur, agriculturalist, supplier, grandfather, inventor, illustrator

Real World Terms
Production, farmer, molasses, buyer, transportation, market, family, crops

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalization
Exploration of culture and tradition confronts the unknown through new discoveries and validates prior knowledge**.**

More Complex Generalizations
Exploration requires recognizing purpose and responding to it.
Community support is important in continuing traditions.

How could the intelligent behaviors help inventors and entrepreneurs invent a new discovery that would assist in preserving traditions?
What part did exploration play in their new discoveries?

Materials Needed for Task Rotation and/or Task Rotation Menu
- Vocabulary words / cards, sequencing cards, research materials
- Poster board, markers, computer, internet access

MetaCognitive Discussion (Essential Questions)
(Whole Group)

Conceptual Perspectives
1. How can you explore your culture?
2. What makes a tradition important in your family?
3. What traditions would you like to explore and learn more about?
4. How does exploration of traditions bring about positive and negative thoughts?

Intelligent Behaviors
1. What intelligent behaviors were dominant in the characters portrayed in this book?
2. What intelligent behaviors helped you to understand the importance of tradition?
3. What intelligent behaviors did you observe in your classmates during the task rotation activities?
4. How did the grandfather demonstrate the following intelligent behaviors in the story?
    - Remaining open to continuous learning
    - Persisting
    - Taking responsible risks
    - Striving for accuracy and precision

Literary Perspective
1. Choose three phrases that describe the book Molasses Man.

2. Create a mobile that represents important events from the story. Share it with someone at home.
3. Does this story remind you of any other stories or experiences that you have had?

Student/Teacher Reflections

Students will be given a quilt square to design representing their favorite tradition or culture. The squares will be bound together to form a "Classroom Quilt of Traditions." Discussion questions:

1. How are each of our squares related?
2. How are they different?
3. What new traditions have you learned about through our journey of exploration?
4. Which of the traditions represented on our quilt are supported by our community?
5. Have your family beliefs and values changed during the exploration of our unit? How?

Math Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** E.Q.: How can you sequence the steps to make molasses? Students will sequence the steps to making molasses by putting picture cards in order. They will record an estimated time of how long each step will take based on information from the story. NCSOS: Math Grade 2 Goal 2: The learner will recognize and use standard units of metric and customary measurement. (time) **V*__L*__S*__M__B__P__I__N__**	**Interpersonal Learner (B)** **Sensing-Thinking** E.Q.: How can you generate a pictograph to represent which students in our class like and dislike molasses? Students will participate in a taste test of molasses. They will record results on a pictograph. (Use a molasses jar for the symbol. Each one will represent two students.) NCSOS: Math Grade 2 Goal 4 The learner will understand and use data and simple probability concepts. 4.01: Collect, organize, describe, and display data using Venn Diagrams (three sets) and pictographs where symbols represent units (2's, 5's, and 10's). **V*__L*__S*__M__B__P*__I*__N__**
Understanding Learner (C) **Intuitive-Thinking** E.Q.: What strategies can you use to solve word problems? Students will write a word problem about selling molasses. All answers will result in an amount of money that they will make. Students will trade papers with a partner, and each will solve the other's problem. Example: If I sold four jars of molasses for 3 dollars each how much money would I make? NCSOS: Math Grade 2 Goal 1- The learner will read, write, model, and compute with whole numbers through 999. 1.03- Create, model, and solve problems that involve addition and equal grouping. **V__L*__S__M__B__P__I*__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** E.Q.: How can you use symmetry to create an advertisement that would explore the concept of estimation, problem solving, or pictographs. Students will design a poster exploring one of the following concepts: estimation, problem solving, or pictographs. The poster will have to be designed in a symmetrical fashion NCSOS: Math Grade 2 Goal 3- Geometry-The learner will perform simple transformations. 3.03- Identify and make: symmetric figures, congruent figures **V__L*__S*__M*__B__P__I__N__**

Real World Connections With Products

Analyze, generate, create, manages, designs

Real World Applications

Data analyst, mathematician, statistician, artist, banker

Real World Terms

Data, estimate, strategies, finances, numbers, survey, sequence

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalization

Exploration of culture and tradition confronts the unknown through new discoveries and validates prior knowledge**.**

More Complex Generalizations

Exploration requires recognizing purpose and responding to it.
Community support is important in continuing traditions.

Which intelligent behaviors would help the banker be successful in his job?
How could graphing help a data analyst use the intelligent behavior of striving for accuracy keep accurate records of information?
What intelligent behaviors would an advertiser use as he explores the strategies of marketing?

Materials Needed for Task Rotation and/or Task Rotation Menu

- Picture cards, Molasses Man, pictograph, paper, markers, pencils, paper money, poster paper

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How can estimating bring about change in exploration?
2. How does problem solving allow students exploration in math?
3. How does exploration of graphic materials provide purposeful understanding?

Intelligent Behaviors

1. What intelligent behaviors will you use to effectively explore your task rotation?
2. How can questioning and posing problems be utilized within the task rotation?
3. How is Metacognition an important factor in your task rotation?

Literary Perspective

1. What are three examples of estimation in the story Molasses Man?
2. How could a graph help the grandfather keep track of how many jars of molasses he had made?
3. How was problem solving observed in Molasses Man?

Student/Teacher Reflections

Students will use a sentence strip to record ways that exploration is seen in math. Students will categorize these observations in a way of their choice.

Concept: Exploration

Topic: Culture and Tradition
Generalization: **Exploration of culture and traditions confronts the unknown through new discoveries and validates prior knowledge.**

- Exploration provides opportunities for students to value family traditions.
- Exploration requires recognizing purpose and responding to it.
- Exploration is inclusive of values and traditions.
- Community support is important in continuing traditions.

Essential Question(s) Does exploration of culture and tradition create conflict as new discoveries occur?

Task Rotation Menu

Level	Mastery	Understanding	Self-Expressive	Interpersonal
1	**Students will identify and match vocabulary words to their definitions relating to traditions and culture.**	**Students will visually organize picture cards to retell the story <u>The Molasses Man.</u>**	**Brainstorm all of the explorations that have created positive changes within a culture.**	**Write about a tradition that you like and one that you dislike. Explain your reasons.**
2	**Students will take a survey of their classmates to find out who likes, dislikes, or has not tried molasses. They will create a bar graph displaying their results.**	**How has the change in the production of molasses affected the economy/sales today? How has the change affected the continuation of the tradition?**	**Predict possible changes that may occur in the year 2025 within culture and tradition as exploration of ideas continue.**	**Personal Journal Writing: How would you feel if your favorite cultural tradition were taken away?**
3	**Students will choose a tradition. They will research and report on its origination.**	**Students will work in small groups to generate solutions for communities who are at risk of letting their traditions die. Example: Plan a community heritage day.**	**Create a futuristic city for the year 2025. Design a visual representation of how exploration has caused a change in culture and tradition.**	**Create and present a motivational speech about the need to develop traditions with your family**

Real World Connections With Products

Identify, implement, illustrate, generate, judge, organizing, compare, interpret, predict

Real World Applications

Artist, marketing designer, journalist, author

Real World Terms

Research, illustrator, producer, writer, associated press

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalization

Exploration of culture and tradition confronts the unknown through new discoveries and validates prior knowledge**.**

More Complex Generalizations

Exploration requires recognizing purpose and responding to it.
Community support is important in continuing traditions.
Exploration provides opportunities for students to value family traditions.

1. What intelligent behaviors did you use to complete the task rotation?
2. What intelligent behaviors did you observe in your classmates?
3. How did metacognition help you complete the task rotation effectively?

Materials Needed for Task Rotation and/or Task Rotation Menu

- Vocabulary word cards, molasses, spoons, reference materials, picture cards, journals, paper, pencil

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How does exploration change values and traditions?
2. Why do traditions change as exploration occurs?
3. What happens when traditions are confronted with new explorations?

Intelligent Behaviors

1. What intelligent behaviors will you use to effectively explore your task rotation?

2. How can questioning and posing problems be utilized within the task rotation?
3. How is Metacognition an important factor in your task rotation?
4. Which intelligent behaviors are used to internalize tradition?

Literary Perspective

1. Choose three phrases that describe the book Molasses Man.
2. Create a mobile that represents important events from the story. Share it with someone at home.
3. Does this story remind you of any other stories or experiences that you have had?

Student/Teacher Reflections

Create a recipe that describes exploration and how it has changed tradition.
Example: 2 cups of a 6-foot Christmas tree vs. 1 ceramic Christmas tree

Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** E.Q. Why are traditions important and why is it important that they are passed down to future generations? Students will write a journal entry describing why traditions are important, and why it is important that they are continued and passed down. What habits of mind are represented by ancestors in a community who pass down traditions? NCSOS: Social Studies Grade 2 Goal 3: The learner will analyze how individuals, families, and communities are alike and different. 3.3 Compare similarities and differences among cultures in various communities. 3.4 Identify multiple roles performed by individuals in their families and communities. **V__L__S__M__B__P__I_*_N__**	**Interpersonal Learner (B)** **Sensing-Thinking** E.Q. How can a puppet show be used to teach young children about the importance of culture and traditions? In small groups write and perform a puppet show that is designed to teach younger children about the importance of values and traditions. What habits of mind will you use when carrying out this process? NCSOS: Language Arts Grade 2 Goal 4: The learner will apply strategies and skills to create oral, written, and visual texts. 4.06 Plan and make judgments about what to include in written products (e.g., narratives of personal experiences, creative stories, skits based on familiar stories and/or experiences. **V*__L__S*__M*__B*__P*__I*__N__**
Understanding Learner (C) **Intuitive-Thinking** E.Q.: How can you use a Venn Diagram to compare and contrast how molasses was made during "olden days" to how it is made in modern times? Activity: Students will complete a Venn Diagram comparing how molasses was made during "olden days" to how molasses is made in modern times. What habits of mind did you have to use to complete this activity? NCSOS: Language Arts Grade 2 Goal 2: The learner will develop and apply strategies and skills to comprehend text that is read, heard, and viewed. 2.6 The learner will recall facts and details from text. 2.7 The learner will discuss similarities and differences in events and characters across stories. **V__L__S*__M__B__P__I*__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** E.Q.: How can you create a new culture and with it's own traditions and values? Imagine that you are a member of a new culture. Choose a tradition that your culture celebrates. This can be completely from your imagination. Tell about its value and importance in your community. What habits of mind will you use in order to invent this new culture and tradition? NCSOS: Language Arts Grade 2 Goal 4: The learner will apply strategies and skills to create oral, written, and visual texts. **V*__L__S__M__B__P*__I*__N__**

Real World Connections With Products

Creates, analyzes, edits, write, performs

Real World Applications
Editor, puppeteer, author, costume designer, storyteller

Real World Terms
Movement, music, voice, edit, design, revise, draft, audience, stage

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalization
Exploration of culture and tradition confronts the unknown through new discoveries and validates prior knowledge**.**
More Complex Generalizations
Exploration provides opportunities for students to value family traditions.
Exploration requires recognizing purpose and responding to it.
Community support is important in continuing traditions.

What intelligent behaviors would the author and editor have in common?
What intelligent behaviors would a costume designer exhibit as he/she creates costumes for various performances?
What intelligent behaviors did you use as you complete the task rotation? Which ones could you improve on?

Materials Needed for Task Rotation and/or Task Rotation Menu

- Journals, pencils, puppet, stage area, props, scripts, Venn Diagram

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives
1. How has exploration of culture and tradition allowed you to gain a deeper understanding of its importance?
2. How has exploration of culture and tradition allowed you to become a more independent thinker and risk taker?
3. How did exploration influence the process of producing molasses now as opposed to the "olden days"?

Intelligent Behaviors
1. What intelligent behaviors have you used to gain a deeper understanding of the value of culture and tradition?

2. What intelligent behaviors will you use to effectively explore your task rotation?
3. How can questioning and posing problems be utilized within the task rotation?
4. How is Metacognition an important factor in your task rotation?

Literary Perspective

1. Compare how you and your family work together toward a common goal just as the family in the Molasses Man did?
2. Rewrite the story and change the ending pretending that the tradition of making molasses was not carried on. How would this effect the community?

Student/Teacher Reflections

Compile a scrapbook of community traditions. Discuss the importance of each tradition and its importance in community and family life.

Math Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Create a "How-To" manual exploring estimation, problem solving, pictographs, or symmetry. You will use your manual to explain the concept to a classmate. **V*__L*__S*__M__B__P__I__N__**	**Interpersonal Learner (B)** **Sensing-Thinking** Using all four topics (estimation, graphing, symmetry, problem solving) assess your strengths and weaknesses. How can you overcome your weaknesses using the intelligent behaviors? **V__L__S__M__B__P__I*__N__**
Understanding Learner (C) **Intuitive-Thinking** Design a survey to determine the amount of time it takes students to explore mathematical concepts. (problem solving, estimation, graphing, symmetry) Analyze the data and represent on a chart of your choice. **V*__L*__S*__M__B__P*__I*__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Create a unique step-by-step model to teach two of the following objectives to your classmates; problem solving, estimation, graphing, symmetry. **V__L*__S*__M__B__P*__I*__N__**

Essential Question: How are problem solving, estimation, graphing, and symmetry developed through exploration?

Real World Connections With Products

Assessing, analyzing, explaining

Real World Applications

Author, statistician, data analyst

Real World Terms
Publish, data, investigate, instrument, hypothesis, validity, theory, synthesize, observation

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalization
Exploration of culture and tradition confronts the unknown through new discoveries and validates prior knowledge**.**
More Complex Generalizations
Exploration requires recognizing purpose and responding to it.

How may exploration of ideas impact each of the following careers: author, statistician, and data analyst?
Which intelligent behaviors are needed as these careers explore ideas?

Materials Needed for Task Rotation and/or Task Rotation Menu

- paper, survey

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives
1. How can assessing your strengths/weaknesses change your perspectives toward your learning?
2. How did the activities in the task rotation allow you to explore?

Intelligent Behaviors
1. Which intelligent behaviors will you use to effectively explore your rotation?
2. How can creating a step-by-step model allow you to explore the concept further?
3. How did your metacognition drive the activities you performed during the task rotation?

Literary Perspective

1. How did using a step-by-step model help the grandfather teach his grandson about making molasses?
2. How can using a survey help with the exploration of new culture and traditions?

Student/Teacher Reflections

Students will design a survey for the future. The survey will be given to the "adults" in their lives. These adults will predict the changes in culture and tradition that they think might occur in the next 20 years.

Additional Support Materials

Favorite Read-Alouds

The Night of Las Pasados by: Tomie dePaola
Whale Snow by: Debby Dahl Edwardson
Bluebonnet Girl by: Michael Lind
The Blind Hunter by: Kristina Rodanas

Finger Plays, Nursery Rhymes and Songs

Video Clips

Paintings & Prints

As a follow-up activity to this unit, include a mock roadside stand where the students could market and sell their created substitute product. The purpose of this activity is to help them express which Intelligent Behaviors the characters in the story might have used when they had to market and sell their molasses as a family tradition. (see Task Rotation Learning Activities, Self-Expressive Learner, p.6)

Teacher Reflections

Literary Selection

Date **School** **Grade**

1. What were the strengths of the task rotations and/or other activities?

2. How did the task rotations and/or activities reveal students' Intelligent Behaviors? Please discuss how each Intelligent Behavior manifested it self.

3. What would you change or add the next time you taught this lesson?

4. What opportunities for growth does the resource unit have?

5. What were "ah ha's?" for the students? For teachers?

"Additional Comments

APPENDIX

A

Additional Instructional Concept-Based Activities

NOTE: ALL REVISIONS ARE IN RED FONT

Project Bright IDEA 2: Interest Development Early Abilities

A Jacob Javits Gifted Education Program
Funded by the US Department of Education
2004-2009

Concept: Exploration

Topic: People Who Made a Difference
Grade 2
K-2

Christina Jump-Chambers, RRGSD
Debra Jones, Lenoir County
North Carolina Department of Public Instruction
Exceptional Children Division
Academically or Intellectually Gifted Program

The American Association For Gifted Children at Duke University

Big Ideas Manifested

Topic – People Who Made a Difference

Literature Selection – Leonardo, Beautiful Dreamer

Author –Robert Byrd

Concepts	**Themes**
Exploration	Lifelong Thirst for Knowledge
Issues or Debates	**Problems or Challenges**
New ideas vs. traditions Man vs. nature Man vs. self	Lack of education Lack of money or resources Inability to complete some tasks
Processes	**Theories**
Observation Inquiry Teaching Problem solving	One person can make a difference Believe in oneself Never give up
Paradoxes	**Assumptions or Perspectives**
Nothing ventured, nothing gained Give credit where credit is due	Success despite environment

Concept – Exploration **Topic –** People Who Made a Difference

NC SCOS:

English Language Arts Goals:

2.01 Read and comprehend both narrative and expository texts appropriate for grade two.
2.04 Pose possible how, why, and what-if questions to understand and /or interpret text.
2.06 Recall facts and details from a text.
3.01 Use personal experiences and knowledge to interpret written and oral messages.
3.04 Increase oral and written vocabulary by listening, discussing, and composing text when responding to literature that is read and heard.
4.04 Use oral communication to identify, organize, and analyze information.
4.05 Respond appropriately when participating in group discourse by adapting language and communication behaviors to the situation to accomplish a specific purpose.

Math Goals:

3.01 Combine simple figures to create a given shape.
3.02 Describe the change in attributes as two- and three-dimensional figures are cut and rearranged.

Suggested Literature Selection(s) – Leonardo, Beautiful Dreamer

Look and Listen for…

Intelligent Behaviors

Story Focus: Remaining open to continuous learning
Listening with understanding and empathy
Creating, Imagining, Innovating
Persisting

Student Activities: Remaining open to continuous learning
Listening with understanding and empathy
Creating, Imagining, Innovating
Persisting

Thinking Skills Focus – Figural Similarities and Differences (Chapter 2)

Topic Focus – People Who Made a Difference

Concept Focus - Exploration

Overarching Generalizations –

Exploration requires recognizing purpose and responding to it.
Exploration confronts "the unknown."
Exploration may result in "new findings" or the confirmation of "old findings."

More Complex Generalization –

Exploration can create relationships, which can be harmonious and discordant.

Directions for Teachers

Display sentence strips with the generalizations. Discuss topics and vocabulary words needed to gain a deeper understanding of the conceptual lessons.

Suggested Topics for Discussion
Contributing to society, being open-minded, persisting, being a lifelong learner, the idea of wondering about the world, setting goals

Suggested Vocabulary Words for Discussion
Inspired, curiosity, genius, magnificent, prosperous, renowned, anatomy, sculptor, philosopher, architect, perspective, apprentice, extravagant, ambitious, Renaissance, contemplation, inquisitive, infinite, potential

Vocabulary Extension
Illustrate the vocabulary by creating a mini-picture dictionary.

Hooks
Select a generalization(s) and essential questions. Introduce one or more of the following topics:

Six Facets of Understanding

Facet 1 – EXPLANATION
• Present a picture of the horse from Leonardo, Beautiful Dreamer. Discuss and let students tell what they see in the picture. • Exploration requires recognizing purpose and responding to it. • Why do you think Leonardo chose to study the bodies of living things in order to create his works of art?
Facet 2 – INTERPRETATION
• Read the excerpt from the book about *The Pool of Water*. Students brainstorm questions they have about the world. • Exploration confronts "the unknown." • How does Leonardo's thirst to learn how things work relate to you?
Facet 3 – APPLICATION
• Students solve a real-world math problem. Brainstorm what skills were used to solve the problem. • Exploration requires recognizing purpose and responding to it. • In what other areas of our lives would we use these skills?
Facet 4 – PERSPECTIVE
• Create window notes about "The Last Supper." Survey the students about their responses. • Exploration confronts "the unknown." • What are the different points of view about The Last Supper in our class?
Facet 5 – EMPATHY
• Role-play how you would react if your favorite park was closed due to litter. • Exploration may result in "new findings" or the confirmation of "old findings." • Leonardo had a strong interest in the health of the land, how do you feel about protecting our land?
Facet 6 – SELF-KNOWLEDGE
• Read aloud "I have wasted my hours….Tell me if anything at all was done." Share a time when you felt as Leonardo did, when you worked very hard on a task and did not accomplish what you thought you could. • Exploration may result in "new findings" or the confirmation of "old findings." • What are my strengths and weaknesses in the way I think about my own learning?

Read: Leonardo, Beautiful Dreamer by Robert Byrd

The book needs to be read over the course of several days; it is VERY detailed on every page and needs to be broken down into the following categories:

Introduction
Childhood
Florence, apprenticeship
The Court of Ludovico
The Great Horse
The Last Supper
Animal drawings and notebooks
Grand plans and visions, creations
Love of nature
The Mona Lisa

Task Rotation Learning Activities

K-2

All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) Sensing- Thinking	Interpersonal Learner (B) Sensing-Thinking
You are a biographer and you are asked to write a biography about Leonardo. **Identify as many of Leonardo's accomplishments as you can.** How does exploration require recognizing purpose and responding to it? How does exploration confront the unknown? What intelligent behaviors did you use to create your list? **V* L__S__M__B__P__I* N__**	**Choose a partner.** **Dissect a model of a living thing (frog, eye, heart).** **Illustrate the living thing before and after the dissection. Contrast the two pictures.** How does exploration require recognizing purpose and responding to it? How does exploration confront the unknown? How does exploration result in "new findings" and the confirmation of "old findings?" How did you apply your intelligent behaviors to complete this task? **V* L__S* M__B*__P* I__N***

Understanding Learner (C) **Intuitive-Thinking**	Self-Expressive Learner (D) **Intuitive-Feeling**
Create a graphic organizer of the intelligent behaviors exhibited by Leonardo. How does exploration require recognizing purpose and responding to it? How does exploration confront "the unknown?" What intelligent behaviors did you use to complete this graphic organizer? **V*_L__S*_M__B__P__I*_N__**	**Create a visual representation of one of Leonardo's inventions that you most appreciate. Summarize on paper the qualities of the invention that you most appreciate.** How does exploration result in "new findings" and the confirmation of "old findings?" How does exploration require recognizing purpose and responding to it? How did you apply your intelligent behaviors to complete this task? **V*_L*_S*_M__B__P__I*_N__**

NC SCOS: English/Language Arts Objectives:

2.04 Pose possible how, why, and what-if questions to understand and/or interpret text.
2.06 Recall facts and details from the text.
4.04 Use oral communication to identify, organize, and analyze information.
4.05 Respond appropriately when participating in group discourse by adapting language and communication behaviors to the situation to accomplish a specific purpose.

I added a technology piece as one of the first task rotations.
www.sanford-artadventures.com/play/leonardo/a2.html This site reinforces the main accomplishments of Leonardo in an adventure game format.

Real World Connections With Products

Application (compose, dissect, design, create, draw, editorialize)

Real World Applications

Writer, biologist, artist, advertising executive, graphic designer

Real World Terms

Construct, design, dissect, persuade, organize, relate, editorialize, prioritize

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Materials Needed for Task Rotation and/or Task Rotation Menu

- Paper and pencil
- Models of living things (frog, eye, heart, etc.)
- Crayons, colored pencils
- Materials to create visual representation

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives:

1. How does exploration require recognizing purpose and responding to it?
2. How does exploration confront "the unknown?"
3. How does exploration result in "new findings" or the confirmation of "old findings?"

Intelligent Behaviors:

1. What intelligent behaviors enabled you to complete the learning tasks?
2. How do you demonstrate these intelligent behaviors daily?
3. What intelligent behaviors do you see as strengths in these tasks?
4. What intelligent behaviors did you observe in Leonardo?
5. How would you apply Leonardo's intelligent behaviors in approaching tasks?

Literary Perspective

1. How did the design of the book affect your understanding about Leonardo?
2. As you reflect upon the events in Leonardo's life, what impact do you think he had on the world?
3. Why do you think the author included direct quotes from Leonardo in this book?
4. If Leonardo were living today, how might it affect his inventions?

Student/Teacher Reflections:

1. How does Leonardo exemplify a lifelong learner?
2. What importance did Leonardo put on nature while exploring living things?

Math Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** **Leonardo said, "No image, even of the smallest object, enters the eye without being turned upside down." As you think about this quote complete the following task.** **Distinguish between examples of flips, slides, and turns.** How has exploration of these mathematical transformations resulted in "new findings" or the confirmation of "old findings" for you? What intelligent behaviors enabled you to identify these examples? **V__L*_S*_M__B__P__I__N__**	**Interpersonal Learner (B)** **Sensing-Thinking** **Hypothesize that you are an image that enters a superhuman eye.** **Pair and share: Using your body execute a flip, slide, and turn.** How has exploration of these mathematical transformations resulted in "new findings" or the confirmation of "old findings" for you? How has exploration of these mathematical transformations required recognizing purpose and responding to it? What intelligent behaviors enabled you to demonstrate and identify these mathematical transformations? **V__L*_S*_M__B*_P*_I__N__**
Understanding Learner (C) **Intuitive-Thinking** **Leonardo studied smaller parts of the human body in order to understand it more completely.** **Create a triangle using more than 2 shapes.** How has exploration of these mathematical transformations resulted in "new findings" or the confirmation of "old findings" for you? How has exploration of these mathematical transformations required recognizing purpose and responding to it? What intelligent behaviors enabled you to create this example? **V__L*_S*_M__B__P__I__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** **Leonardo used his mastery of perspective to create *The Last Supper*.** **Create a picture using a circle, triangle, square, trapezoid, parallelogram, rhombus, and rectangle that you have drawn and cut out from construction paper.** How has exploration of these shapes required recognizing purpose and responding to it? What intelligent behaviors enabled you to create this image? **V__L*_S*_M__B__P__I__N__**

NC SCOS: Math Objectives:
3.01 Combine simple figures to create a given shape
3.02 Describe the change in attributes as two- and three-dimensional figures are cut and rearranged.

Real World Connections With Products
Application (investigate, analyze, design, reflect, produce, create, compare, innovate)

Real World Applications
Astronomer, hydrologist, forensic pathologist, weapons designer, theatrical designer, electrician, aviation, mathematician, philologist, mechanical engineer, botanist, physicist, architect, artist

Real World Terms
Create, identify, communicate, demonstrate

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Materials Needed for Task Rotation and/or Task Rotation Menu

- Teacher made examples for mastery task
- Pattern blocks
- Pencil and paper

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives:
1. How does exploration result in "new findings" or the confirmation of "old findings?"
2. How does exploration confront the unknown in the learning tasks that you have completed?
3. How does exploration require recognizing purpose and responding to it?

Intelligent Behaviors:
1. What intelligent behaviors enabled you to complete the learning tasks?
2. How do you demonstrate these intelligent behaviors daily?
3. What intelligent behaviors did you see as your strength(s) in these activities? Why?

Literary Perspectives:

1. How did Leonardo's study of mathematics help him understand perspective, a technique used to create an illusion of space and depth in painting? Explain how you might have used mathematics to create your picture.
2. Leonardo wrote backwards, from right to left. Discuss why you think he kept notes that way. Students will write a note to partner using this backward technique. Discuss what feelings you had after using this technique.

Student/Teacher Reflections:
If you were to teach this book to next year's students, what would you do to ensure that they understood the relationship that Leonardo had with mathematics?

Concept: Exploration

Topic: People Who Made a Difference

Generalizations:
Exploration results in "new findings" and the confirmation of "old findings."
Exploration requires recognizing purpose and responding to it.
Exploration confronts "the unknown."

Essential Question(s):
How does exploration result in "new findings" and the confirmation of "old findings?"
How does exploration require recognizing purpose and responding to it?
How does exploration confront "the unknown?"

Task Rotation Menu

Level	Mastery	Understanding	Self-Expressive	Interpersonal
1	Distinguish between examples of flips, slides, and turns.	Create a triangle using more than two shapes.	Create a picture using a circle, triangle, square, trapezoid, parallelogram, rhombus, and rectangle that you have drawn and cut out from construction paper.	Pair and share: execute a flip, slide and turn.
2	Identify shapes that have been flipped, slid, or turned. (Shapes that have been transformed at least twice.)	Show at least two different ways to make a triangle using more than two shapes.	Apply knowledge of flips, slides, and turns to locate examples in our environment.	Role-play a flip, slide or turn to a partner. Your partner will identify which transformation you have demonstrated.
3	Examine a group of shapes that are identified as flipped, slid, or turned. Check for accuracy. Correct any incorrect transformations.	Develop a 3-dimensional figure using plane shapes.	Partners design an invention that uses a flip, slide, or turn.	Pairs take turns creating a shape on geoboards and their partner will create a flip, slide or turn from their partner's shape.

Real World Connections With Products
Application (investigate, analyze, design, reflect, produce, create, compare, innovate)

Real World Applications
Astronomer, hydrologist, forensic pathologist, weapons designer, theatrical designer, electrician, aviation, mathematician, philologist, mechanical engineer, botanist, physicist, architect, artist

Real World Terms
Create, identify, communicate, demonstrate, construct, design, apply, role play, develop

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Materials Needed for Task Rotation and/or Task Rotation Menu

- Teacher made examples for mastery task
- Pattern blocks
- Pencil and paper
- Geoboards and rubber bands

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How does exploration result in "new findings" or the confirmation of "old findings?"
2. How does exploration confront the unknown in the learning tasks that you have completed?
3. How does exploration require recognizing purpose and responding to it?

Intelligent Behaviors

1. What intelligent behaviors enabled you to complete the learning tasks?
2. How do you demonstrate these intelligent behaviors daily?
3. What intelligent behaviors did you see as your strength(s) in these activities? Why?

Literary Perspective

1. How did Leonardo's study of mathematics help him understand perspective, a technique used to create an illusion of space and depth in painting? Explain how you might have used mathematics to create your picture.
2. Leonardo wrote backwards, from right to left. Discuss why you think he kept notes that way. Students will write a note to partner using this backward technique. Discuss what feelings you had after using this technique.

Student/Teacher Reflections

If you were to teach this book to next year's students, what would you do to ensure that they understood the relationship that Leonardo had with mathematics?

Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking**	**Interpersonal Learner (B)** **Sensing-Thinking**
Create a timeline of what you consider to be Leonardo's five greatest accomplishments. How does exploration require recognizing purpose and responding to it? What intelligent behaviors enabled you to select and order these accomplishments? **V__L*S__M__B__P__I*N__**	**With a partner assume the role of Leonardo and his lawyer. You are defending Leonardo's use of dissection as he stands trial for these crimes against The Church. Present your defense to the jury (your classmates).** How does exploration result in "new findings" or the confirmation of "old findings?" How does exploration require recognizing purpose and responding to it? How does exploration create relationships, which can be harmonious or discordant? What intelligent behaviors enabled you to complete this task? **V*L__S__M__B__P*I*N__**
Understanding Learner (C) **Intuitive-Thinking**	**Self-Expressive Learner (D)** **Intuitive-Feeling**
Assume the role of Leonardo. Write a letter to present day inventors. What advice would you give them? How does exploration result in "new findings" or the confirmation of "old findings?" How does exploration confront the unknown? How does exploration require recognizing purpose and responding to it? What intelligent behaviors enabled you to assume this role? **V*L__S__M__B__P__I*N__**	**Create an advertisement for one of Leonardo's inventions.** How does exploration result in "new findings" or the confirmation of "old findings?" How does exploration require recognizing purpose and responding to it? What intelligent behaviors enabled you to assume this role? **V*L__S*M*B*P__I__N__**

I included another task rotation to the student reflection and assessment piece:

Read a book about another person who has made a difference. (I included books about people such as Rachel Carson, Lewis and Clark, Martin Luther King, Jr., Harriet Tubman, Rosa Parks, George Washington Carver, etc. I provided books of varying reading skill levels. Students could read with another classmate if so desired.) After reading the book, reflect on how the person you read about made a difference in the lives of others. Record your ideas in a journal. How did this person's exploration or contribution require recognizing purpose and responding to it? What intelligent behaviors enabled the person to make a difference in the lives of others?

NC SCOS: English/Language Arts Objectives:

2.04 Pose possible how, why, and what-if questions to understand and /or interpret text.
2.06 Recall facts and details from a text.
3.01 Use personal experiences and knowledge to interpret written and oral messages.
3.04 Increase oral and written vocabulary by listening, discussing, and composing text when responding to literature that is read and heard.
4.04 Use oral communication to identify, organize, and analyze information.
4.05 Respond appropriately when participating in group discourse by adapting language and communication behaviors to the situation to accomplish a specific purpose.

Real World Connections With Products

Application (discuss, compare, contrast, defend, produce, investigate, create, perform)

Real World Applications

Lawyer, Priest, Inventor, Advertising Executive, Biographer

Real World Terms

Role-play, defend, support, advertise, advise

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Materials Needed for Task Rotation and/or Task Rotation Menu

- Pencil and paper
- Leonardo, Beautiful Dreamer by Robert Byrd
- Items for advertisement (crayons, markers, video camera, tape recorder, costumes, poster board, etc.)

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives:

1. How does exploration result in "new findings" and the confirmation of "old findings?"
2. How does exploration confront "the unknown?"
3. How does exploration require recognizing purpose and responding to it?
4. How does exploration create relationships, which can be harmonious or discordant?

Intelligent Behaviors

1. What intelligent behaviors enabled you to complete the learning tasks?
2. How do you demonstrate these intelligent behaviors daily?
3. What intelligent behaviors did you see as strengths in these tasks?
4. What intelligent behaviors did you observe in Leonardo?
5. How would you apply Leonardo's intelligent behaviors in approaching tasks?

Literary Perspectives:

1. Discuss three or more words that describe Leonardo, Beautiful Dreamer.
2. How does Leonardo compare to someone else you know, or have read about, that has made a difference?
3. As you reflect upon events in Leonardo's life, what do you think the world would be like today if he had succeed in one of his endeavors?
4. What reactions did you have while reading Leonardo, Beautiful Dreamer?
5. How did the time period in which Leonardo lived affect how his inventions were received?

Student/Teacher Reflections

Have students respond to the question, how have your thoughts changed about exploration? What qualities did you observe in Leonardo?

Math Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** **Construct an example of a shape that has been slid, flipped, or turned.** How has exploration of these mathematical transformations resulted in "new findings" or the confirmation of "old findings" for you? What intelligent behaviors enabled you to construct these examples? **V__L*_S*_M__B*_P__I__N__**	**Interpersonal Learner (B)** **Sensing-Thinking** **Create with a partner a 1-minute dance routine that incorporates the use of a flip, slide, and turn.** **Your classmates will record the presence of these transformations in your routine.** How has exploration of these mathematical transformations resulted in "new findings" or the confirmation of "old findings" for you? How does exploration confront "the unknown?" How has exploration of these mathematical transformations required recognizing purpose and responding to it? What intelligent behaviors enabled you to demonstrate and identify these mathematical transformations? **V__L*_S*_M*_B__P*_I__N__**
Understanding Learner (C) **Intuitive-Thinking** **Explain how you could teach someone in your class to construct a 3-dimensional figure using plane figures.** How has exploration of these mathematical transformations resulted in "new findings" or the confirmation of "old findings" for you? How has exploration of these mathematical transformations required recognizing purpose and responding to it? What intelligent behaviors enabled you to teach your classmate how to construct a 3-dimensional figure? **V*_L*_S*_M__B*_P*_I*_N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** **Select a real-world object that uses flip, slide, or turn. Explain how you would improve upon this design.** How has exploration of these shapes required recognizing purpose and responding to it? What intelligent behaviors enabled you to make these improvements? **V*_L*_S*_M__B*_P*_I*_N__**

NC SCOS: Math Objectives:

3.01 Combine simple figures to create a given shape.
3.02 Describe the change in attributes as two- and three-dimensional are cut and rearranged.

Real World Connections With Products
Application (choreograph, design, form, inform, how-to, invent)

Real World Applications
Dancer, quilter, sculptor, presenter, inventor

Real World Terms
Invent, choreograph, construct, teach, improve

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Materials Needed for Task Rotation and/or Task Rotation Menu

- Pattern blocks
- Music samples and tape player
- Construction paper
- Scissors, glue
- Pencil and paper
- Various objects for improving upon inventions

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives:

1. How has exploration of these mathematical transformations resulted in "new findings" or the confirmation of "old findings" for you?
2. How has exploration of these mathematical transformations required recognizing purpose and responding to it?
3. How does exploration confront "the unknown?"

Intelligent Behaviors

1. What intelligent behaviors enabled you to complete the learning tasks?
2. How do you demonstrate these intelligent behaviors daily?
3. What intelligent behaviors did you see as strengths in these tasks?
4. What intelligent behaviors did you see in your partners/ classmates during these tasks?

Literary Perspectives:

1. As you reflect on these tasks and our book, Leonardo, Beautiful Dreamer, what real world truths can you identify?

Student/Teacher Reflections

What conclusions did you reach about how mathematics is used in the real world? Brainstorm a list of things that you see in the real world that are mathematical in nature.

Additional Support Materials

www.mos.org/leonardo/
www.answers.com/topic/leonardo-da-vinci

Favorite Read-Alouds

Rachel: The Story of Rachel Carson by Amy Ehrlich
Harvesting Hope: The Story of Cesar Chavez by Kathleen Krull
The Great Expedition of Lewis and Clark by Private Reubin Field, Member of the Corps of Discovery**Paintings & Prints**
Mona Lisa
The Last Supper

Teacher Reflections

Literary Selection

Date **School** **Grade**

1. What were the strengths of the task rotations and/or other activities?

2. How did the task rotations and/or activities reveal students' Intelligent Behaviors? Please discuss how each Intelligent Behavior manifested it self.

3. What would you change or add the next time you taught this lesson?

4. What opportunities for growth does the resource unit have?

5. What were "ah ha's?" for the students? For teachers?

APPENDIX

A

Additional Instructional Concept-Based Activities

Project Bright IDEA 2: Interest Development Early Abilities

A Jacob Javits Gifted Education Program
Funded by the US Department of Education
2004-2009

Concept: Nutrition

Topic: Systems

K-2

Kim Vincent, Beverly McLawhorn
Roanoke Rapids and Lenoir County

North Carolina Department of Public Instruction
Exceptional Children Division
Academically or Intellectually Gifted Program

The American Association For Gifted Children at Duke University

Big Ideas Manifested

Topic - Measurement/ Nutrition

Literature Selection – *Lulu's Lemonade*
Author - Barbara deRubertis

Concepts	**Themes**
Systems	Capacity of gallon, quart, pint, tablespoon, teaspoon Connections between nutrition and healthy living
Issues or Debates	**Problems or Challenges**
Healthy foods vs. unhealthy foods Measurement connections	Measuring and following a recipe
Processes	**Theories**
Problem solving in real life situations	
Paradoxes	**Assumptions or Perspectives**
Things are not always what they seem.	Math is directly correlated with everyday life. A healthy body system is attributed to healthy choices.

Big Ideas Manifested

Topic - Nutrition/measurement

Literature Selection – *Pancakes, Pancakes*
Author: Eric Carle

Concepts	**Themes**
Systems	Persistence precedes success
Issues or Debates	**Problems or Challenges**
Wants vs. Needs	Following a recipe
Processes	**Theories**
Problem solving	
Paradoxes	**Assumptions or Perspectives**
Persistence vs. complacency	Hard work always pays off in the end.

Big Ideas Manifested

Topic - **Literature Selection –** **Author -**

Concepts	**Themes**
Issues or Debates	**Problems or Challenges**
Processes	**Theories**
Paradoxes	**Assumptions or Perspectives**

Concept – Systems **Topic –** Nutrition

Suggested Literature Selection(s) – Lulu's *Lemonade; Pancake, Pancake*

Look and Listen for…

Intelligent Behaviors

Story Focus : Persisting, Probing and Questioning, Metacognition, Creating**,** imagining, innovating

Student Activities : Persisting, Probing and Questioning, Metacognition, Creating, imagining, innovating

Thinking Skills Focus - Describing similarities and differences in food

Topic Focus - Nutrition

Concept Focus - Systems

Overarching Generalizations - Systems may be influenced by other systems; Systems have parts that work to complete a task; Systems follow rules.

More Complex Generalizations - Systems may change over time

Directions for Teachers

Display sentence strips with the generalizations. Discuss topics and vocabulary words needed to gain a deeper understanding of the conceptual lessons.

Suggested Topics for Discussion
Food guide pyramid, systems, healthy bodies, measurement, nutrition, capacity

Suggested Vocabulary Words for Discussion
Cup, gallon, quart, pint, tablespoon, teaspoon, recipe, capacity, unhealthy

Vocabulary Extension
Math journals

Hooks

Select a generalization(s) and essential questions. Introduce one or more of the following topics:

Six Facets of Understanding

Facet 1 – EXPLANATION
Draw and label the parts of the food guide pyramid. What are examples of healthy and unhealthy foods? Describe what a healthy and unhealthy body would look like**.** What might happen if we did not use the parts of the food guide pyramid to create a healthy diet?
Facet 2 - **INTERPRETATION**
Critique the lunchroom menu for healthy and unhealthy foods. Illustrate how our body would change over time if we only ate unhealthy foods. How is the food guide pyramid like a system? How is our body like a system?
Facet 3 - APPLICATION
How might following the food guide serving suggestions help us to maintain a healthy body? Plan a menu for a class party consisting of healthy snacks.
Facet 4 - PERSPECTIVE
Use exercise 14…"Similarities and Differences in Foods" in the Critical Thinking Skills Book Compare and contrast our lunchroom menu to McDonald's menu**.** Compare and contrast a healthy and unhealthy body in your journals. How are the parts of our lunchroom system similar or different to the parts of a restaurant system?
Facet 5 – EMPATHY
How would you feel if you were not allowed to eat certain foods? Assume the role of a chef; plan a menu that you would serve to your family including all of the parts of the food guide pyramid.
Facet 6 – SELF-KNOWLEDGE
Draw and write about how might you become a healthy eater. How do I know that systems influence other systems?

Read: *Lulu's Lemonade:*

Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Using the provided felt foods, categorize and complete the food guide system interactive bulletin board. Explain how you classified the food items. As you reflect on your knowledge of the food guide pyramid, what conclusions might you draw about systems? **V_*_L__S_*_M__B_*_P__I_*_N__**	**Interpersonal Learner (B)** **Sensing-Thinking** Role-play you are cafeteria manager, discuss what parts of the system you would have to use to make your lunchroom run successfully. What intelligent behaviors should a cafeteria worker possess in order to make the system a success? **V_*_L__S__M__B_*_P__I_*_N__**
Understanding Learner (C) **Intuitive-Thinking** Using the models "Sweet Tooth Sue" (unhealthy body) and " Healthy Harry" (healthy body), deduce within your group which food items provided would be a food choice for healthy or unhealthy bodies. Be prepared to explain your reasoning. What do you predict will happen in "Sweet Tooth Sue" and "Healthy Harry's" diet systems if you switched their food items? **V_*_L__S_*_M__B_*_P__I_*_N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Imagine the class has to create a new fruit drink, illustrate a label for the class fruit drink. Illustrate the ingredients on your label that are included in the fruit drink. As you think about your new fruit drink, what flavor combinations could you use to change the taste? What intelligent behaviors are you demonstrating in this activity? **V_*_L__S_*_M__B__P__I_*_N__**

Learning Targets:

Healthful Living:

5.01-Place foods in the appropriate group of the Food Guide Pyramid.
5.04- Keep foods and their containers clean.
5.05- Keep hands clean, using appropriate cleaning techniques.
5.07-Identify snack foods that help the teeth and body.
1.01 Describe influences on health, e.g. food, rest, exercise, hygiene/cleanliness

Literacy:

4.01-Use new vocabulary in own speech and writing.

Real World Connections With Products
Explain, discuss, describe, imagine, conclude

Real World Applications
Cafeteria manager/workers, nutritionist, restaurant manager/workers

Real World Terms
Organize, evaluate, apply, observe

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations

Systems may be influenced by other systems
Systems have parts that work together to complete a task
Systems follow rules

Complex Generalizations

Systems may change over time

Materials Needed for Task Rotation and/or Task Rotation Menu

- Felt food guide pyramid and individual food pieces
- "Sweet Tooth Sue"/ "Healthy Harry"- interactive bulletin board cut outs
- Journals
- Art materials
- Intelligent Behavior Chart

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspective

1. How can systems be influenced by other systems?
2. How can one system be positive or negative?
3. How can systems work together to complete a task?
4. How can a system contribute to growth?
5. How may systems change over time?
6. How can a system be successful by following rules?

Intelligent Behaviors

1. What Habits of Mind (HOM) did you use in completing the task rotation activities from the unit of study?
2. How do you demonstrate these HOM daily?
3. What HOM did you see as your strength in these activities?

Literary Perspective

1. Identify the measurements used in our book.
2. Discuss why it is important to follow a recipe.
3. What would the lemonade taste like without following the recipe?
4. How would you describe *Lulu's Lemonade* to a person who has never read this literature piece in three or more sentences?
5. How do the foods in the book contribute to a healthy body as a system?

Student/Teacher Reflections

As you reflect on the lesson, compare and contrast in seminar style our cafeteria to a restaurant.

Math Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking**	**Interpersonal Learner (B)** **Sensing-Thinking**
Looking at two different shaped gallon pitchers, determine if they would hold the same amount of liquid. Draw and write in your math journal about what you had to do to solve this math problem. What conclusions might you draw about intelligent behaviors from participating in this activity? **V_*_L_*_S_*_M__B__P__I_*_N__**	Compose a letter to Eric Carle convincing him to add your favorite ingredients to his pancakes. After adding your ingredients to his pancakes, how many ingredients will you have in all? What habit of mind do you think Eric Carle used when writing *Pancakes, Pancakes?* **V_*_L_*_S_*_M__B__P__I_*_N__**
Understanding Learner (C) **Intuitive-Thinking**	**Self-Expressive Learner (D)** **Intuitive-Feeling**
Read *Pancake, Pancake* and tally the number of times the vocabulary word cup is heard throughout the story. Formulate an addition fact that would equal the amount of tally marks recorded. What habit of mind did the characters demonstrate in the book? **V_*_L_*_S_*_M__B__P__I_*_N__**	Create your own nonstandard unit of measurement for a cup using the provided materials: clay, Lego's, cubes, waffle blocks, etc. Investigate your results. Name two or more habits of mind that you used in this activity. How did you use them in this activity? **V_*_L_*_S_*_M__B_*_P__I_*_N__**

Learning Targets:

Science:

4.05- Demonstrate that standard units of measure produce more consistent results than nonstandard units, allowing information to be shared.

Math:

1.01- Develop number sense for whole numbers through 30.
- a. Connect model, number word (orally), and number, using a variety of representations.
- b. Count objects in a set.
- c. Read and write numerals
- g. Recognize equivalence in sets and numbers 1-10.

1.03- Solve problems and share solutions to problems in small groups.

2.01- Compare attributes of two objects using appropriate vocabulary (color, weight, height, width, length, texture)

Real World Connections With Products
Determine, compare, generate, conclude

Real World Applications
Chef, author, mathematician

Real World Terms
Produce, disseminate, measure, analyze, gather

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations

Systems may be influenced by other systems
Systems have parts that work together to complete a task
Systems follow rules

Complex Generalizations

Systems may change over time

Materials Needed for Task Rotation and/or Task Rotation Menu

- Journals
- Different shaped gallon pitchers
- book: *Pancakes, Pancakes*
- building manipulatives

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How can systems be influenced by other systems?
2. How can one system be positive or negative?
3. How can systems work together to complete a task?
4. How can a system contribute to growth?
5. How may systems change over time?
6. How can a system be successful by following rules?

Intelligent Behaviors

1. What Habits of Mind (HOM) did you use in completing the task rotation activities from the unit of study?
2. How do you demonstrate these HOM daily?
3. What HOM did you see as your strength in these activities?

Literary Perspective

1. Identify the measurements used in our books.
2. Discuss why it is important to follow a recipe.
3. What would the lemonade/pancakes taste like without following the recipe?
4. How would you describe *Lulu's Lemonade* and *Pancakes, Pancakes* to a person who has never read these literature pieces in three or more sentences?

Student/Teacher Reflections

Give students a piece of paper to draw and write about the lesson on pancakes. Students will discuss what they are doing with those around them so that when they are finished, the pictures will be combined to create a classroom book about pancakes.

Concept: Systems

Topic: Nutrition

Generalization: Systems maybe influenced by other systems

Essential Question(s): How can systems influence other systems?

Task Rotation Menu

Level	Mastery	Understanding	Self-Expressive	Interpersonal
1	Using the provided felt foods, categorize and complete the food guide system interactive bulletin board.	Illustrate one item from each food group and explain how it is healthy for your body.	Generate a healthy menu that you would serve in our cafeteria for one week.	Using the provided menus, determine where your family would prefer to eat dinner tonight.
2	Identify and graph the parts presents in each level of the food guide pyramid.	If you were to eliminate one food group, how would it affect your body?	Speculate why all restaurants do not have a good grade. Discuss what parts of the restaurant system would affect their grade.	If you were our cafeteria manger, what systems would you have to use to make our lunchroom a success, draw and write about it in your journal.
3	Reconstruct and label the food guide pyramid in your journal.	Using your knowledge of the food guide pyramid, why do you think your parents feel it is important for you to eat your vegetables everyday?	Invent a solution so that all restaurants have a good grade.	Compose a letter to send to the cafeteria manager convincing her to use healthier snack alternatives your group has developed.

Real World Connections With Products
Categorize, identify, explain, determine

Real World Applications
Cafeteria workers/manager, nutritionist, restaurant workers/manager

Real World Terms
Evaluate, observe, apply, analyze

Overarching Generalizations

Systems may be influenced by other systems
Systems have parts that work together to complete a task
Systems follow rules

Complex Generalizations

Systems may change over time

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Materials Needed for Task Rotation and/or Task Rotation Menu

- Felt food guide pyramid and individual food cut outs
- Journals
- Art materials
- Various restaurant menus

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How can systems be influenced by other systems?
2. How can one system be positive or negative?
3. How can systems work together to complete a task?
4. How can a system contribute to growth?
5. How may systems change over time?
6. How can a system be successful by following rules

Intelligent Behaviors

1. What Habits of Mind (HOM) did you use in completing the task rotation activities from the unit of study?
2. How do you demonstrate these HOM daily?
3. What HOM did you see as your strength in these activities

Literary Perspective

1. Identify the measurements used in our books.
2. Discuss why it is important to follow a recipe.
3. What would the lemonade/pancakes taste like without following the recipe?
4. How would you describe Lulu's Lemonade and Pancakes, Pancakes to a person who has never read these literature pieces in three or more sentences?
5. How do the foods in the books contribute to a healthy body as a system?

Student/Teacher Reflections

After participating in a taste explorer activity discuss how each food item may contribute to a healthy body system.

Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Illustrate the food guide pyramid. How can these foods contribute to a healthy body as a system? **V_*_L__S_*_M__B__P_*_I__N__**	**Interpersonal Learner (B)** **Sensing-Thinking** Using the provided menus, determine where your family would prefer to eat dinner tonight. From what we have learned about the food guide pyramid and nutrition, illustrate why you chose this restaurant for your family? What intelligent behaviors did you demonstrate in completing this activity? **V_*_L__S_*_M__B__P__I_*_N__**
Understanding Learner (C) **Intuitive-Thinking** Compare and contrast a healthy and non healthy body by identifying the foods each one would eat. If you were to eat sweets all day long, how would this affect your body as a system? **V_*_L__S_*_M__B__P_*_I__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Generate a healthy menu that you would serve in our cafeteria for one week. What occupations contribute to the lunchroom system to make it a success? **V_*_L__S _*_M__B__P__I_*_N__**

Learning Targets:

Healthful Living:
5.01-Place foods in the appropriate group of the Food Guide Pyramid.
5.03-Select a school breakfast and lunch that contain a variety of grains, vegetables and fruit.
5.07-Identify snack foods that help the teeth and body.
1.01- Describe influences on health, e.g., food, rest, exercise, hygiene/cleanliness
Language Arts:
4.04-Maintain conversation and discussions

Real World Connections With Products
Generate, categorize, describe, explain

Real World Applications
Cafeteria manager/workers, nutritionist, restaurant manager/workers

Real World Terms
Produce, manufacture, evaluate, analyze

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching generalizations

Systems may be influenced by other systems
Systems have parts that work to complete a task
Systems follow rules

Complex generalizations
Systems may change over time

Materials Needed for Task Rotation and/or Task Rotation Menu

- Magazines
- Scissors
- Food guide pyramid
- Journals
- Various restaurant menus/ lunchroom menu
- Art materials

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How can systems be influenced by other systems?
2. How can one system be positive or negative?
3. How can systems work together to complete a task?
4. How can a system contribute to growth?
5. How may systems change over time?
6. How can a system be successful by following rules?

Intelligent Behaviors

1. What Habits of Mind (HOM) did you use in completing the task rotation activities from the unit of study?
2. How do you demonstrate these HOM daily?
3. What HOM did you see as your strength in these activities?

Literary Perspective

1. Identify the measurements used in our books.
2. Discuss why it is important to follow a recipe.
3. What would the lemonade/pancakes taste like without following the recipe?
4. How would you describe *Lulu's Lemonade* and *Pancakes, Pancakes* to a person who has never read these literature pieces in three or more sentences?
5. How do the foods in the books contribute to a healthy body as a system?

Student/Teacher Reflections

Students and teacher together will choose ten recipes. Students in small groups will illustrate the recipes so that when they are finished, they will combine all recipes to make a classroom cookbook.

Math Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Demonstrate the number on the given card by using the manipulatives provided. What intelligent behavior did you use to demonstrate the given number on the card? **V_*_L_*_S_*_M__B__P_*_I__N__**	**Interpersonal Learner (B)** **Sensing-Thinking** Using play dough, role play a chef creating a new pizza and allow your audience to determine the number and type of toppings to be added to your pizza. As you reflect on your creation, which habits of mind would a chef possess? **V_*_L_*_S__M__B_*_P__I_*_N__**
Understanding Learner (C) **Intuitive-Thinking** Decide which holds more using the following containers: cup, pint, gallon, quart. Investigate the amount in each container and compare the results. How did you use the questioning habit of mind when comparing the containers? **V_*_L__*S__M__B__P__I_*_N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Create a robot using the provided containers: gallon, pint, quart, and cup. Speculate how the containers could fit inside one another. Which intelligent behavior did you use to complete this task? **V_*_L_*_S__M__B__P__I_*_N__**

Learning Targets:

Math:

1.01- Develop number sense for whole numbers through 30.
- a. Connect model, number word (orally), and number, using a variety of representations.
- b. Count objects in a set.
- c. Read and write numerals
- g. Recognize equivalence in sets and numbers 1-10.

1.03- Solve problems and share solutions to problems in small groups.

2.01- Compare attributes of two objects using appropriate vocabulary (color, weight, height, width, length, texture)

Real World Connections With Products
Investigate, determine, comparing

Real World Applications
Chef, author, mathematician

Real World Terms
Produce, disseminate, measure, analyze, gather

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching generalizations

Systems may be influenced by other systems
Systems have parts that work to complete a task
Systems follow rules

Complex generalizations
Systems may change over time

Materials Needed for Task Rotation and/or Task Rotation Menu

- Manipulatives
- Number cards
- Measurement containers

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How can systems be influenced by other systems?
2. How can one system be positive or negative?
3. How can systems work together to complete a task?
4. How can a system contribute to growth?
5. How may systems change over time?
6. How can a system be successful by following rules?

Intelligent Behaviors

1. What Habits of Mind (HOM) did you use in completing the task rotation activities from the unit of study?
2. How do you demonstrate these HOM daily?
3. What HOM did you see as your strength in these activities?

Literary Perspective

1. Identify the measurements used in our books.
2. Discuss why it is important to follow a recipe.
3. What would the lemonade/pancakes taste like without following the recipe.
4. How would you describe Lulu's Lemonade and Pancakes, Pancakes to a person who has never read these literature pieces in three or more sentences?

Student/Teacher Reflections

In your math journals have students depict which habits of mind are important when exploring measurement systems.

Additional Support Materials

Favorite Read-Alouds
Lemonade for Sale
Bread, Bread,Bread: Ken Heyman
Blueberries for Sal: McKlosky
Piggy's Pizza Parlor

Finger Plays, Nursery Rhymes and Songs

Video Clips

Paintings & Prints

Teacher Reflections

Literary Selection

Date **School** **Grade**

1. What were the strengths of the task rotations and/or other activities?

2. How did the task rotations and/or activities reveal students' Intelligent Behaviors? Please discuss how each Intelligent Behavior manifested it self.

3. What would you change or add the next time you taught this lesson?

4. What opportunities for growth does the resource unit have?

5. What were "ah ha's?" for the students? For teachers?

"Additional Comments

APPENDIX

A

Additional Instructional Concept-Based Activities

Project Bright IDEA 2: Interest Development Early Abilities

A Jacob Javits Gifted Education Program
Funded by the US Department of Education
2004-2009

Concept: Change

Topic: Plants

K-2

Beverrly McLawhorn- Elayne Harper
Susan McCollam, Teresa Sutton- Lenoir County

Susan Gaylor, Kim Vincent-Roanoke Rapiids

North Carolina Department of Public Instruction
Exceptional Children Division
Academically or Intellectually Gifted Program

The American Association For Gifted Children at Duke University

Big Ideas Manifested

Topic - Plants

Literature Selection – Tops and Bottoms
Author – Janet Stevens

Concepts	**Themes**
Conflict Change	Nature vs. Beast
Issues or Debates	**Problems or Challenges**
Cooperation vs. Conflict	Overcoming Problems
Processes	**Theories**
Working together Learn by doing	Hard work done well has it's own reward.
Paradoxes	**Assumptions or Perspectives**
	Everyone working together makes the work easier.

Big Ideas Manifested

Topic -Change

Literature Selection –The Tiny Seed
Author – Eric Carle

Concepts	**Themes**
Change Patterns Survival	Dependency on your environment
Issues or Debates	**Problems or Challenges**
Life vs. death Nature vs. man Nature vs. nature	Adapting to your environment Survive against nature
Processes	**Theories**
Adjusting to challenges (lack of)	Survival of the fittest
Paradoxes	**Assumptions or Perspectives**
	Assume that life cycle will continue

Big Ideas Manifested

Topic - Change

Literature Selection – Bluebonnet Girl
Author – Michael Lind

Concepts	**Themes**
Survival Interdependence Balance Scarcity Sacrifice	"Pride goeth before the fall"
Issues or Debates	**Problems or Challenges**
Scarcity vs. abundance Generosity vs. selfishness Rigidity vs. flexibility	Surviving the drought Giving up prized possessions
Processes	**Theories**
Problem solving Risk-taking	Change is inevitable
Paradoxes	**Assumptions or Perspectives**
Character with the least gave up the most A little child shall lead you	Bluebonnet flower originated by an Indian girl's gift

Concept – Change Topic – Plants

Suggested Literature Selection(s) – Tops and Bottoms by Janet Stevens
Supporting Literature - The Tiny Seed by Eric Carle
Bluebonnet Girl by Michael Lind

Look and Listen for…

Intelligent Behaviors

Story Focus	**Creating, Imagining, and Innovation** **Persisting**
Student Activities	**Creating, Imagining, Innovating** **Persisting** **Metacognition** **Posing Questions**

Thinking Skills Focus – *Beginning Building Thinking Skills* – Parks and DeArmas
Describing Similarities and Differences

Topic Focus - Plants

Concept Focus – Change

Overarching Generalizations – Change is necessary for growth.
Change is inevitable.

More Complex Generalizations – Change can be positive or negative.
Patterns are found in nature.
Conflict can bring about change.
Conflict occurs between man and nature.

Directions for Teachers

Display sentence strips with the generalizations. Discuss topics and vocabulary words needed to gain a deeper understanding of the conceptual lessons.

Suggested Topics for Discussion
decision making, wants vs. needs, patterns, change, identify common organisms/plants, use of plants as natural resources, parts of plants, how plant life cycles ensure our continuous use of plants

Suggested Vocabulary Words for Discussion
business partners, harvesting, season, gather, scowled, roots, tassels, stem, leaves, seeds, flowers, profit

Vocabulary Extension
Discuss the meaning of the above vocabulary words. Have children demonstrate the meaning of the selected words through role-play.

Hooks
Select a generalization(s) and essential questions. Introduce one or more of the following topics:

Six Facets of Understanding

Facet 1 – EXPLANATION
Read the story "Tops and Bottoms" to the class. (See the attached Narrative Retelling sheet to discuss/review the story.) What are examples of plants tops and bottoms that we eat? Explain why rabbit changed from growing tops one season to growing bottoms the next season. As you reflect on the story, what might some patterns be in rabbit's and bear's behavior? How did their conflict bring about change? (You can use the attached sheet to discuss the plant parts when doing this activity.)
Facet 2 – INTERPRETATION
Place a white carnation in a vase filled with colored water. Evaluate what happened to the flower. Why might this have happened? Why is change important in the life cycle of a plant?
Facet 3 – APPLICATION
Perform the action poem "Planting Seeds" with the class (see additional support materials). What did you learn about plants through this poem? Apply this knowledge to create a song or perform a dance about plants. What changes occur in the life cycle of a plant? Plant some bean and sunflower seeds. These will be observed and compared in the Math Learning task rotation.
Facet 4 – PERSPECTIVE
Imagine that you are an ant. How would a seed look from your perspective? Compare that to the perspective of a person. Fold a sheet of paper in half. Draw a picture of ant's perspective on one side. Draw a picture of the person's perspective on the other side. Write about your comparisons. How did your perspective change?
Facet 5 – EMPATHY
Read "The Tiny Seed". (See the attached Narrative Retelling sheet to discuss/review the story.) Role-play the part of the seed. How would you feel if you walked in the tiny seed's shoes? What changes occurred in his journey? Would you make any other changes in his journey? Why or why not?
Facet 6 – SELF-KNOWLEDGE
If you were a plant, would you prefer a sunny day or a rainy day? At the end of the day, reflect on how you felt. Create a song showing how you felt. What would you change in your day?

Read:

Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Sequence the life cycle of a plant using picture cards. (Use the attached flow sheet with pictures to do this sequencing activity.) Label each step. Change is inevitable. How is this seen in a life cycle? How were you using metacognition in completing this task? **V*L*S__M__B__P__I*N__**	**Interpersonal Learner (B)** **Sensing-Thinking** If you were a plant, how would you feel if you were an endangered species? Write a letter to the president showing your reflections about how you feel and asking him for help. How does conflict occur between man and nature? What habit of mind did you use? **V*L*S__M__B__P__I*N__**
Understanding Learner (C) **Intuitive-Thinking** Discuss the importance of plants. Group students in pairs. Have the students select two reasons that plants are important and explain their thinking. Does using plants create a conflict between man and nature? How did you use metacognition in this task? **V*L*S__M__B__P__I*N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Imagine what the world would be like if there were no trees. Make a web as you brainstorm your ideas. How might this negative change affect our environment? Which habit of mind did you use to complete this task? **V*L__S*M__B__P__I__N***

Real World Connections With Products
examine
generate
observe
compare/contrast

Real World Applications
gardner
scientist
researcher

Real World Terms
explain

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations
Change is necessary for growth.
Change is inevitable.

Complex Generalizations
Change can be positive or negative.
Patterns are found in nature.
Conflict can bring about change.
Conflict occurs between man and nature.

Materials Needed for Task Rotation and/or Task Rotation Menu

- copy of "The Tiny Seed"
- copy of "Tops and Bottoms"
- Narrative Retelling form
- pictures of story events
- various seeds
- various plants
- soil
- Styrofoam cups or plant pots
- drawing paper
- story paper
- corn plant sequencing sheet
- plant part sheet

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How is change necessary for growth?
2. How is change inevitable?
3. How can change be positive? negative?
4. Where can patterns be found in nature?
5. How does conflict bring about change?

Intelligent Behaviors

1. What Intelligent Behaviors did the characters in the story demonstrate?
2. How did you use these or other Intelligent Behaviors in completing the task rotation activities from the unit of study?
3. How do you demonstrate these Intelligent Behaviors?

Literary Perspective

1. Would you recommend the book to someone? Why or why not?
2. How can the conflict between the bear and the rabbit be resolved?
3. Was the change in bear positive or negative?

Student/Teacher Reflections

Assign each student a partner. Have them role-play the conflict between bear and rabbit and develop a mural showing how bear changed at the end of the story.

Math Task Rotation Learning Activities

K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Go on a living number hunt. Have students find plants whose petals/leaves are associated with a certain number. Grass =1; clover = 3; buttercups = 5 etc. Discuss patterns in nature and how almost always one type of plant/flower will have the same number of petals/leaves. Choose a recorder to document their findings. What are some of the patterns that you observed in nature? Discuss your findings. What intelligent behavior did you use? **V*L*S__M__B__P*I__N***	**Interpersonal Learner (B)** **Sensing-Thinking** Explain to the students that they are going to make their own grass cups. Read and discuss each step of the recipe (see additional support materials). Assign each student a partner. Pairs of students will measure ingredients as they create their grass cups. What outcomes do you seek? After completion, announce to the class that they may eat their creation. Have the students discuss how they feel about eating "dirt, grass, and worms." What are some of the benefits you will derive from engaging in this activity? How were your intelligent behaviors used? **V*L*S__M__B__P*I*N__**
Understanding Learner (C) **Intuitive-Thinking** Plant bean seeds and sunflower seeds. Compare and contrast the growth of each plant. Be prepared to explain your results. What conclusions might you draw? What changes might you notice as you compare your plants' growth? How are intelligent behaviors reflected in this activity?	**Self-Expressive Learner (D)** **Intuitive-Feeling** Create a new type of plant using attribute blocks. How can this plant be used as a natural resource? Would this be a positive or negative change in the environment? What habits of mind did you use when completing this task?

V*L*S__M__B__P__I*N__	**V*L*S*M__B__P__I*N***

Real World Connections With Products
Observe, explain, compare, contrast, conclude

Real World Applications
gardener, researcher, scientist

Real World Terms
analyze, observe, evaluate

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations – Change is necessary for growth.
Change is inevitable.

More Complex Generalizations – Change can be positive or negative.
Patterns are found in nature.
Conflict can bring about change.
Conflict occurs between man and nature.

Materials Needed for Task Rotation and/or Task Rotation Menu

- sunflower seeds/bean seeds
- attribute blocks
- see recipe in appendix (need ingredients)
- paper/pencil
- dirt
- cups
- rulers

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How is change necessary fro growth?
2. How is change inevitable?
3. How can change be positive? negative?
4. Where can patterns be found in nature?
5. How does conflict bring about change?

Intelligent Behaviors

1. What Intelligent Behaviors did the characters in the story demonstrate?
2. How did you use these or other Intelligent Behaviors in completing the task rotation activities from the unit of study?
3. How do you demonstrate these Intelligent Behaviors?

Literary Perspective

1. Would you recommend the book to someone? Why or why not?
2. How can the conflict between the bear and the rabbit be resolved?
3. Was the change in bear positive or negative?

Student/Teacher Reflections

Give students a piece of paper to draw a picture about the lesson on plants. Students will discuss what they are doing with those around them so that when they are finished the pictures will be combined to create a classroom book about plants.

Concept: Change

Topic: Plants

Generalization: Change generates additional change.
Change is inevitable.
Change is necessary for growth.

Essential Question(s)

Task Rotation Menu

Level	Mastery	Understanding	Self-Expressive	Interpersonal
1	Draw the parts of a plant that we use. Then draw a picture of one way it can be used.	Examine seeds from various types of plants. Choose two types of seeds. Compare and contrast them using a Venn diagram.	Imagine what the world would be like if there were no trees. Make a web as you brainstorm your ideas.	If you were a plant, would you prefer a sunny day or a rainy day? How would you feel on this day? Create a song telling how you would feel.
2	Sequence the life cycle of a plant using picture cards of each step. Label each step.	Discuss the importance of plants. Group students in pairs. Have the students select two reasons that plants are important and explain their thinking.	Predict what our world would look like if there were no plants. Choose a habitat and draw a picture demonstrating this new world. ➢ ocean ➢ mountain ➢ forest ➢ desert	If you were a plant, how would you feel if you were an endangered species? Write a letter to the president showing your reflections about how you feel and asking him for help.
3	Demonstrate the life cycle of plant growth by germinating seeds and documenting it's growth to the adult stage.	Discuss our need to continue the existence of plants as natural resources. Have students role play a scene where one student persuades the other to take care of an endangered plant species.	Create a new type of plant. Draw and label the parts of this plant using the computer program "KidsPix." Explain how one of its parts could be used as a natural resource.	Generate a list of laws to protect your plant. Decide which are the most important and the easiest to enforce. Decide how these laws will be enforced.

Real World Connections With Products
Examine, compare and contrast, generate, predict

Real World Applications
president, farmer, gardener, scientist

Real World Terms
observe, evaluate, analyze

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations – Change is necessary for growth.
Change is inevitable.

More Complex Generalizations – Change can be positive or negative.
Patterns are found in nature.
Conflict can bring about change.
Conflict occurs between man and nature.

Materials Needed for Task Rotation and/or Task Rotation Menu

- writing paper
- pencils
- picture cards
- drawing paper
- drawing utensils
- seeds
- potting soil
- cups
- computer
- computer program "KidsPix"

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How is change necessary for growth?
2. How is change inevitable?
3. How can change be positive? negative?
4. Where can patterns be found in nature?
5. How does conflict bring about change?

Intelligent Behaviors

1. What Intelligent Behaviors did the characters in the story demonstrate?
2. How did you use these or other Intelligent Behaviors in completing the task rotation activities from the unit of study?
3. How do you demonstrate these Intelligent Behaviors?

Literary Perspective

1. Would you recommend the book to someone? Why or why not?
2. How can the conflict between the bear and the rabbit be resolved?
3. Was the change in bear positive or negative?

Student/Teacher Reflections

Debate the pros and cons of this unit.

Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Retell the story, Tops and Bottoms, in your own words. Examine pictures showing events. Place the pictures in the correct sequence. As you reflect on the events, how would the outcome change with different plants or animals? What intelligent behaviors did rabbit and bear demonstrate? **V*L*S*M__B__P__I*N***	**Interpersonal Learner (B)** **Sensing-Thinking** If you were a plant, would you prefer a sunny day or a rainy day? How would you feel on this day? Create a song about how you would feel. As you reflect on your choice, what are some weather patterns that you might find in nature? What intelligent behavior did you use when making your selection? **V*L__S__M__B*P__I*N__**
Understanding Learner (C) **Intuitive-Thinking** Discuss our need to continue the existence of plants as natural resources. Have students role play a scene where one student persuades the other to take care of an endangered plant species. Would the loss of a plant species be a positive or negative change? Explain. What conclusions might you draw? What intelligent behavior did you use when making this decision? **V*L*S__M__B*P__I__N__**	**Self-Expressive Learner (D)** **Intuitive-Feeling** Imagine that you are a seed. How might you travel? Where would you go? As you plan your trip, generate a map tracking your journey as well as showing your mode of transportation. What conflicts may you encounter between man and nature while on your journey? How might your intelligent behaviors help you imagine your task? **V*L*S*M__B__P__I*N__**

Real World Connections With Products
explain, generate, observe

Real World Applications
gardener, researcher, scientist

Real World Terms
analyze, observe, evaluate

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations –Change is necessary for growth.
Change is inevitable.

More Complex Generalizations – Change can be positive or negative.
Patterns are found in nature.
Conflict can bring about change.
Conflict occurs between man and nature.

Materials Needed for Task Rotation and/or Task Rotation Menu

- Picture cards
- map

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How is change necessary for growth?
2. How is change inevitable?
3. How can change be positive? negative?
4. Where can patterns be found in nature?
5. How does conflict bring about change?

Intelligent Behaviors

1. What Intelligent Behaviors did the characters in the story demonstrate?
2. How did you use these or other Intelligent Behaviors in completing the task rotation activities from the unit of study?
3. How do you demonstrate these Intelligent Behaviors?

Literary Perspective

1. Would you recommend the book to someone? Why or why not?
2. How can the conflict between the bear and the rabbit be resolved?
3. Was the change in bear positive or negative?

Student/Teacher Reflections

Using different colored sentence strips, have students write what they learned about each step of a plant's life cycle. Arrange the strips in a pattern to represent the cycle.

Math Student Reflections and Assessments
Task Rotation Learning Experience
K-2
All conceptual activities must include discussing and/or relating to the selected generalization(s) through essential questions.

Mastery Learner (A) **Sensing- Thinking** Sort and graph pictures of fruits and vegetables. Explain how you categorized them. How did you use persistence when completing this activity? **V*L*S__M__B__P*I__N***	**Interpersonal Learner (B)** **Sensing-Thinking** Role-play how a seed grows into a plant. How does a plant change as it grows? How did you use your imagination in this role play? **V*L*S__M__B*P__I__N***
Understanding Learner (C) **Intuitive-Thinking** Illustrate the components that are important for a plant to grow. Explain how changes in the environment affect plant growth. Is change in a plant's environment positive or negative? How can plants be persistant? **V*L*S*M__B__P__I*N***	**Self-Expressive Learner (D)** **Intuitive-Feeling** Have various vegetables available for observation. Generate a healthy dish, using your vegetables. Share with those around you how you would make this dish. How did you use metacognition in this process? **V*L*S*M__B__P*I__N__**

Real World Connections With Products
similar/differences, identify, compare/contrast, describe, examine, apply

Real World Applications
gardener, chef

Real World Terms
explain

Connect all products in the unit to real world applications reflecting the concept, generalizations and topic. The above is an example of how this might be accomplished.

Overarching Generalizations –Change is necessary for growth.
Change is inevitable.

More Complex Generalizations – Change can be positive or negative.
Patterns are found in nature.
Conflict can bring about change.
Conflict occurs between man and nature.

Materials Needed for Task Rotation and/or Task Rotation Menu

- picture cards
- drawing paper
- drawing utensils
- vegetables

MetaCognitive Discussion (Essential Questions)

(Whole Group)

Conceptual Perspectives

1. How is change necessary fro growth?
2. How is change inevitable?
3. How can change be positive? negative?
4. Where can patterns be found in nature?
5. How does conflict bring about change?

Intelligent Behaviors

1. What Intelligent Behaviors did the characters in the story demonstrate?
2. How did you use these or other Intelligent Behaviors in completing the task rotation activities from the unit of study?
3. How do you demonstrate these Intelligent Behaviors?

Literary Perspective

1. Would you recommend the book to someone? Why or why not?
2. How can the conflict between the bear and the rabbit be resolved?
3. Was the change in bear positive or negative?

Student/Teacher Reflections

Assign each student a partner. Have them role-play the conflict between bear and rabbit and develop a mural showing how bear changed at the end of the story.

Additional Support Materials

Favorite Read-Alouds

Recipes
"Dirt Cups"
crushed Oreo cookies
cool-whip (colored green)
sour straws (cut into 1-inch pieces)
gummy worms

Directions:
Measure ½ cup of Oreo cookies into a Styrofoam cup.
Place a gummy worm in the cookies.
Next, measure 3 tablespoons of cool-whip and spread on top.
Place 8 sour straw pieces into the cool-whip for grass.

Finger Plays, Nursery Rhymes and Songs
"Planting Seeds"
First we dig up the soil
Cheered by spring air.
Pantomine digging up the soil
Then we rake and we rake and we rake.
Pantomine raking.
Next we plant our seeds
With the greatest of care.
Pantomine planting seeds in the ground.
Then we wait and we wait and we wait.
Fold arms and wait.
Under the ground
The young seeds grow.
Curl up on the floor.
Then slowly they start to rise.
Slowly rise up.
Soon, up they sprout
To greet the sun.
Stand up to full height and spread arms.
Oh, what a lovely surprise!

Video Clips

Paintings & Prints

Teacher Reflections

Literary Selection

Date **School** **Grade**

1. What were the strengths of the task rotations and/or other activities?

2. How did the task rotations and/or activities reveal students' Intelligent Behaviors? Please discuss how each Intelligent Behavior manifested it self.

3. What would you change or add the next time you taught this lesson?

4. What opportunities for growth does the resource unit have?

5. What were "ah ha's?" for the students? For teachers?

"Additional Comments

APPENDIX

A

Additional Instructional Concept-Based Activities

Concept: Exploration

Topic: Culture and Tradition

Revision Number: 01

Literary Selection: Molasses Man

Name: Juanita Sutton
School District: Lenoir
Grade Level: 2

As a follow-up activity to this unit, include a mock roadside stand where the students could market and sell their created substitute product. The purpose of this is to help them express which Intelligent Behaviors the characters in the story might have used when they had to market and sell their molasses as a family tradition. (see Task Rotation Learning Activity, Self-Expressive Learner, p.6)

Note: all revision and additions to unit are highlighted in red.