

Project Bright IDEA 2: Interest Development Early Abilities

**A Jacob Javits Gifted Education Program
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Concept: Systems

Topic: Survival

By: Rachel Beguhl, Leonna Finn, & Kelly Zaletel

Grade Level: 5

**The 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
Text –Oh, Rats!
Author – Albert Marrin
Publisher/Date- Dutton Children’s Books/2006

Concepts	Themes/Generalizations
<ul style="list-style-type: none"> • Systems • Change • Survival 	<ul style="list-style-type: none"> • A system may be influenced by other systems positively or negatively • Survival can be affected by man or nature • Symbolism • Parts of systems are interdependent on one another and form symbiotic relationships • Adaptation is necessary for change • Change is inevitable • Change be evolutionary or revolutionary
Issues or Debates	Problems or Challenges
<ul style="list-style-type: none"> • Extermination vs. preservation • Cultural beliefs/customs • Health concerns • Medical Research 	<ul style="list-style-type: none"> • Resources needed for survival • Needs vs. wants • Population control
Processes	Theories/Hypothesis
<ul style="list-style-type: none"> • Inquiry into habitats, foods, climates, ways of life, physical characteristics • Education 	<ul style="list-style-type: none"> • Survival is a natural process • Survival is affected by the environment/habitat • Adaptation is necessary for survival • Survival is determined by what a culture values
Paradoxes	Assumptions or Perspectives
<ul style="list-style-type: none"> • Survival of the species of rats can be positive for one group and at the same time be negative for another group. • How will the survival of rats affect humans? • Yummy rats, yucky rats; pet rats, pesky rats; storybook rats, laboratory rats 	<ul style="list-style-type: none"> • Rats have a negative impact on society. • Rats are the cause of disease. • Rats are an important component in medical science. • Rats have been a proven useful tool oe warfare.

Concept: Systems

Topic: Survival

Suggested Text Selection(s): *Rats* by Albert Marrin

Look, Listen and Identify:

Intelligent Behaviors

Story Focus: Flexible thinking, Questioning and Posing Problems, Thinking and communicating with clarity and precision, Finding Humor, Metacognition, Creating, Imagining, and Innovating, Remaining open to continuous learning, Applying past knowledge

Student Activities: Flexible thinking, Metacognition, Questioning and Posing problems, Creating, Imagining, and Innovating, and Thinking interdependently

NC Standards:

1.06 People adapt to, modify and use their physical environment.

3.02 Examine how changes in the movement of people, goods, and ideas have affected ways of living in the United States.

5.07 Describe the ways the United States and its neighbors specialize in economic activities, and relate these to increased production and consumption.

6.02 Relate how certain technological discoveries have changed the course of history and reflect on the broader social and environmental changes that can occur from the discovery of such technologies.

Local Pacing Guide Timeline:

**Thinking Skills Focus: Describing similarities and differences-value of rats
Comparing and contrasting-cultural beliefs & customs
Summarizing and explaining-history of rats
Debate - need for the survival of rats
Trace the history of rats throughout the ages
Decide/Evaluate – value of rats
Create a product – propaganda**

Topic Focus: Survival

Concept Focus: Systems of Change

Overarching Generalizations:

1. Parts of systems are interdependent on one another and form symbiotic relationships
2. A system may be influenced by other systems positively or negatively
3. Change is inevitable.

More Complex Generalizations (Two or more concepts):

1. Change can be evolutionary or revolutionary.
2. Adaptation is necessary for change.
3. Survival can be affected by man or 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:

- **Habitats**
- **Diversity of cultures**
- **Adaptation**
- **Human environmental interactions**
- **Conflict**
- **Abundance and scarcity**

Suggested Vocabulary Words for Discussion:

Caravans	Rodent	Incisors	Survivor
Consumed	keen	Thigmophilic	Population
Yen	Endangered	Intervals	Tread
Species	Native	Nourishment	Muscle memory
Hoisted	Tethered	Controversial	Granaries
Folklore	Solitary	Confinement	Delicacy
Albino	Hospitable	Immune	Sanitation
Artisans	Microorganisms	Bubonic	Plague
Buboes	Academic	Bacillus	Vigilant
Vaccine	Polio	Meningitis	Trichinosis
Typhus	Lassa fever	Mass destruction	Maim
Vivisection	Muscular dystrophy		

A Six-Step Process for Teaching Academic Vocabulary Terms:

1. Provide a description, explanation or example of the new vocabulary term.
2. Ask students to restate the description, explanation or example in their own words using complete sentences.
3. Ask students to construct a picture, symbol or graphic representing the term or phrase.
4. Engage the students periodically in activities that help them add to their knowledge of the terms in a booklet that they have created (Keep it simple.)
5. Periodically ask students to discuss the terms with one another (**Think** of your favorite vocabulary words from the unit; **pair** with a vocabulary buddy, **share** by discussing the vocabulary terms with your vocabulary buddy.) Teacher should model process each time before students do the Think, Pair, Share with Vocabulary Buddy.
6. Construct games to periodically involve students and allow them to play with the terms.

Robert Marzano

Vocabulary Extension:

- Discuss words and meanings.
- Illustrations.
- Vocabulary Whirl activity by Dan Moirao
- Cracking Vocabulary's CODE by Dan Moirao
- Graphic organizers
- Student Engagement Vocabulary Strategies : 5-4 Vocabulary Predictions,

Six Facets of Understanding

Facet 1 – EXPLANATION
What do you predict will happen as changes continue within rats' habitats? What systems contribute to the rat's success in their environment?
Facet 2 – INTERPRETATION
What is the difference between rats being revered or feared? What changes in attitudes about rats have occurred in different systems over the ages? (<i>Systems: cultural, economic, religious, environmental, human interdependency</i>)
Facet 3 – APPLICATION
In what ways do rats impact systems within a community to survive? Is the survival of a rat important and to whom? What can a rat do to adapt to change in its surrounding environment?
Facet 4 – PERSPECTIVE
What can be learned from the attitudes and relationships towards rats from different cultures? What can we learn about journeys and adaptation from rats?
Facet 5 – EMPATHY
What would it be like to be displaced from your home and community? How might you feel about living in a new environment? What changes do you predict would take place? How would you survive in this new environment?
Facet 6 – SELF-KNOWLEDGE
After reading the story on rats and the systems that were impacted, to what extent have you adapted in your own life? How are you a survivor? How do you see survival as a natural process in your life? What is something you became aware of after reading, <u>Oh, Rats!</u> that you would like to learn more about?

Task Rotation Learning Activities
GRADE 5
OPENING TASK ROTATION: PRE-READING

Oh, Rats by Albert Marrin

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

This task rotation is designed to be done sequentially (A-D) by all students.

<p style="text-align: center;">Mastery Learner (A) Sensing- Thinking</p> <p>Make a KWL chart listing what you know about rats, and what you want to know about rats.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p style="text-align: center;">Interpersonal Learner (B) Sensing-Thinking</p> <p>Using what you know about rats from your KWL chart, discuss with a partner to determine whether each detail you have listed about rats is positive or negative. Mark your chart according to your perspective or point of view.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>
<p style="text-align: center;">Understanding Learner (C) Intuitive-Thinking</p> <p>Using a Venn Diagram, compare and contrast the lives of rats and people. Think about stories you have heard or facts you have learned while completing the diagram.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p style="text-align: center;">Self-Expressive Learner (D) Intuitive-Feeling</p> <p>From the chapter titles and pictures with captions, generate a list of what you predict you may learn about rats after reading this book.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>

Multiple Intelligences Key:

<u>V</u> erbal	<u>L</u> ogical/Mathematical	<u>S</u> patial	<u>M</u> usical
<u>B</u> odily/Kinesthetic	Inter <u>P</u> ersonal	<u>I</u> ntrapersonal	<u>N</u> aturalist

Real World Connections With Products:

Organize, applying, predict, similar/different, compare/contrast, decision making, explaining, collaborating

Real World Applications:

Historian, ecologist, scientist, wildlife rehabilitation specialist, Consumer Affairs

Real World Terms:

Discuss, generate, compare/contrast, list, reflect, point-of –view, perspective

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

- KWL chart
- Venn Diagram
- Paper
- Pencils
- Books

MetaCognitive Discussion (Essential Questions):

(Whole Group)

Conceptual Perspectives:

1. What do you know about rats, and what you want to know about rats?
2. What past experience helped you determine whether each detail you have listed about rats is positive or negative?
3. What do you predict you may learn about rats after reading this book?
4. What factors caused survival?
5. Can systems cause change?
6. Can changing your approach to systems affect the outcome?

Intelligent Behaviors:

1. As humans, which intelligent behaviors could we exhibit to help with systems?
2. How did rats demonstrate intelligent behaviors on a daily basis?
3. Which intelligent behaviors are not being shown that contribute to systems destruction?
4. In what ways did rats demonstrate the following intelligent behaviors?
 - *thinking flexibly
 - *applying past knowledge to new situations
 - *remaining open to continuous learning
5. How could the evolution of rats demonstrate the following behaviors?
 - *metacognition
 - *questioning and problem posing
 - *creating, imagining and innovating

Literary Perspectives:

What is the difference between rats being revered or feared?

What changes in attitudes about rats have occurred in different systems over the ages? (*Systems: cultural, economic, religious, environmental, human interdependency*)

In what ways do rats impact systems within a community to survive? Is the survival of a rat important and to whom?

Student/Teacher Reflections:

Task Rotation Learning Activities

GRADE 5

PAIDIEA SEMINAR TASK ROTATION: DURING READING

Oh, Rats by Albert Marrin

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

See supplementary student hand-out.

<p align="center">Mastery Learner (A) Sensing- Thinking</p> <p>1. What are some possible impacts rats have had on cultures?</p> <p>2. Describe the ways rats were used in warfare.</p> <p align="center">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p align="center">Interpersonal Learner (B) Sensing-Thinking</p> <p>1. What might be some possible descriptions that will help you describe the journey of rats through history?</p> <p>2. Considering the amount of rodent hairs and feces allowed in foods such as peanut butter, what do you envision the public's reaction would be if it was a listed ingredient of the package?</p> <p align="center">V _ L _ S _ M _ B _ P _ I _ N _</p>
<p align="center">Understanding Learner (C) Intuitive-Thinking</p> <p>1. How do rats and their adaptations within their environment affect everyday living for humans?</p> <p>2. Why are rats the preferred animal of choice for scientific study?</p> <p align="center">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p align="center">Self-Expressive Learner (D) Intuitive-Feeling</p> <p>1. What effects would there be on America if rats did not make it aboard the European ships?</p> <p>2. What if McDonald's served rats on their menu?</p> <p align="center">V _ L _ S _ M _ B _ P _ I _ N _</p>

Multiple Intelligences Key:

Verbal

Logical/Mathematical

Spatial

Musical

Bodily/Kinesthetic

InterPersonal

Intrapersonal

Naturalist

Real World Connections With Products:

Organize, applying, predict, similar/different, compare/contrast, decision making, explaining, collaborating

Real World Applications:

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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.

Materials Needed for Task Rotation and/or Task Rotation Menu

- paper
- pencil
- discussion questions
- small group discussion area
- excerpt from the book on selected topic

MetaCognitive Discussion (Essential Questions):

(Whole Group)

Conceptual Perspectives:

1. What do you know about rats, and what you want to know about rats?
2. What past experience helped you determine whether each detail you have listed about rats is positive or negative?
3. What do you predict you may learn about rats after reading this book?
4. What factors caused survival?
5. Can systems cause change?
6. Can changing your approach to systems affect the outcome?

Intelligent Behaviors:

1. As humans, which intelligent behaviors could we exhibit to help with systems?
2. How did rats demonstrate intelligent behaviors on a daily basis?
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4. In what ways did rats demonstrate the following intelligent behaviors?
 - *thinking flexibly
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5. How could the evolution of rats demonstrate the following behaviors?
 - *metacognition
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Literary Perspectives:

What is the difference between rats being revered or feared?

What changes in attitudes about rats have occurred in different systems over the ages? (*Systems: cultural, economic, religious, environmental, human interdependency*)

In what ways do rats impact systems within a community to survive? Is the survival of a rat important and to whom?

Student/Teacher Reflections

Task Rotation Learning Activities
GRADE 5
CULMINATING ASSESSMENT TASK: AFTER READING

Oh, Rats by Albert Marrin

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

<p>Mastery Learner (A) Sensing- Thinking</p> <p>You are a part of a team opening a new museum of the history of rats designed to inform and engage young people. Your task is to select at least five historical events to highlight in your museum. Provide a sketch of the museum’s floor plan and include a description of each room to justify the events included. Create a pamphlet for a visitor that provides a timeline to be used for a self-guided tour.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p>Interpersonal Learner (B) Sensing-Thinking</p> <p>With a partner, role play the positions of a food safety inspector and a food manufacturer debating whether or not rodent hair and feces should be listed as an ingredient on a food label such as peanut butter. Produce a public service announcement informing consumers about the pros and cons.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>
<p>Understanding Learner (C) Intuitive-Thinking</p> <p>Create a newspaper editorial article from the position of a rat about a rat’s opinions/ feelings about whether or not they have been judged fairly through the years. Propose within your article suggestions to change people’s perspective of rats.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p>Self-Expressive Learner (D) Intuitive-Feeling</p> <p>Think about the rats’ journey through the ages. Select a drawing or painting medium, or use mixed media to create your own narrative work that communicates personal ideas about rats and their journey. Give your painting a title and a short narrative explaining the theme of your work.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>

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Materials Needed for Task Rotation and/or Task Rotation Menu

- paper, pencils
- drawing or painting mediums
- graph paper
- internet resources
- video camera
- books on blueprint design
- samples of museum pamphlets
- examples of self-guided tour scripts
- samples of editorial articles

MetaCognitive Discussion (Essential Questions):

(Whole Group):

Conceptual Perspectives:

1. What do you know about rats, and what you want to know about rats?
2. What past experience helped you determine whether each detail you have listed about rats is positive or negative?
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Literary Perspectives:

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In what ways do rats impact systems within a community to survive? Is the survival of a rat important and to whom?

Student/Teacher Reflections

Task Rotation Learning Activities
GRADE 5
FINAL ASSESSMENT TASK ROTATION: AFTER READING

Oh, Rats by Albert Marrin

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

<p style="text-align: center;">Mastery Learner (A) Sensing- Thinking</p> <p>Compare and contrast the journey of rats in Europe and to present day rats. What conclusions are you able to draw from the systems these rats explored? Discuss your thinking that helped you complete this activity. What other ways can you compare and contrast these two?</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p style="text-align: center;">Interpersonal Learner (B) Sensing-Thinking</p> <p>Given a choice between living as a rat in the past or present which would you choose and why? How would you adapt to the systems around you? Explain.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>
<p style="text-align: center;">Understanding Learner (C) Intuitive-Thinking</p> <p>What are six ways the author attracted your interest throughout the story? Summarize your data in a timeline and explain how the rats evolved through those systems of change.</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>	<p style="text-align: center;">Self-Expressive Learner (D) Intuitive-Feeling</p> <p>Pretend you are a rat and have one last system to journey through. In your journal incorporate what you have learned about rats and extend your understanding by explaining what differences or changes would occur in your system. How will you adapt? What changes will need to be made in your surroundings and the evolution of your species to complete your journey?</p> <p style="text-align: center;">V _ L _ S _ M _ B _ P _ I _ N _</p>

Real World Connections With Products:

Real World Applications:

Real World Terms:

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.

Concept Focus:

Overarching Generalizations:

More Complex Generalizations (Two or more concepts):

Essential Question:

(Include concept and intelligent behavior that leads to deeper understanding of the concept through exploration of the generalization)

Materials Needed for Task Rotation and/or Task Rotation Menu

-
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MetaCognitive Discussion (Essential Questions):

(Whole Group)

Conceptual Perspectives:

Intelligent Behaviors:

Literary Perspective:

Student/Teacher Reflections:

Additional Support Materials:

Favorite Read-Alouds:

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

Concept:

Topic:

Generalization(s):

Essential Question(s):

Task Rotation Menu

Level	Mastery	Understanding	Self-Expressive	Interpersonal
1				
2				
3				

Real World Connections With Products:

Real World Applications:

Real World Terms:

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Concept Focus:

Overarching Generalizations:

More Complex Generalizations (Two or more concepts):

Essential Question:

(Include concept and intelligent behavior that leads to deeper understanding of the concept through exploration of the generalization)

Materials Needed for Task Rotation and/or Task Rotation Menu

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APPENDIX

A

Additional Instructional Concept-Based Activities