

UNIT: RESEARCH

LESSON: Whales

GRADES(s): K-1(2)

Conceptual Theme: Relationship to broader curriculum goals in the discipline & in other disciplines? (*Component 1b,c*)

The Whale Unit addresses knowledge and skills for literacy, research, and science. Goals and objectives are aligned NYS Learning Standards for English Language Arts and Science.

Essential understandings (big ideas) and essential questions as outlined below can be applied to any animal unit and will be used again for a 3rd grade research animal unit.

New York State Standards for English Language Arts

Standard 1: Language for Information and Understanding

Students will listen, speak, read, and write for information and understanding. As listeners and readers, students will collect data, facts, and ideas; discover relationships, concepts, and generalizations; and use knowledge generated from oral, written, and electronically produced texts. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to acquire, interpret, apply, and transmit information.

New York State Standards for Math, Science, and Technology

Standard 4:

Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

What are the goals for the lesson? What do you want the students to learn? (*Component 1c*)

Why are these goals suitable for his group of students? (*Component 1c*)

Essential Understandings	Essential Questions	Knowledge & Skills
<ul style="list-style-type: none">- Living things are both similar to and different from each other and nonliving things.- Animals are designed to survive in their environment.- Objects are classified on the basis of similarities and differences in structure and function.	<ul style="list-style-type: none">- How is this animal built to survive?- What does this animal need to survive? (food, environment, relationships with other animals)- Who are this animal's predators and who are its prey?- How does where an animal lives affect how it looks? How it behaves?- How is this animal unique?- How is it related to other animals?	<p><i>Knowledge:</i></p> <ul style="list-style-type: none">- Identify properties that can be used to classify animals- Describe characteristics of animals- Identify ways in which animals can be grouped <p><i>Skills:</i></p> <ul style="list-style-type: none">- Employ research skills to identify and record key information.- Compare and contrast the different types of animals- Identify characteristics of specific animals.

Resources: What instruction materials or other resources, if any, will you use? (*Component 1d*)

- Smart Board
- Notebook Computers
- **Books:** Fiction / Non-Fiction book pairs
Dear Mr. Blueberry, Baby Whales Drink Milk, Humphrey the Whale, Big Blue Whale
- **Graphic Organizers** ~ Technology
1st Grade / 2nd Grade – Children will use a web based graphic organizer developed by Mrs. Chauncey. Each student will work with a notebook computer.
Kindergarten – Paper Graphic Organizer – fill in with words and pictures. Look ahead to notebook computer usage by demonstrating web based graphic organizer.
- **United Streaming:** Video Clips (Approx 1 – 3 minutes each)
Humpback Whales, Blue Whales, Whales are Mammals, Whale Songs

- **Song:** “Baby Beluga” Raffi – Learn, Sing, Record ~ Circle Meeting
- **Whale Books Project** – See attached – K Sample and Grade 1 & 2 Sample
- **Learning About Whales** – Newspaper article with podcasts (selected classes)

Preparation:

KEEP IN MIND: What their research tells us is that on average we recall: 7% of the content of a lecture, • 7 to 15% of what we read; 15 to 30% of content simultaneously using two or more media; about 50% of content that includes interactive discussion, 65-80%% of content that involves practice by doing; more than 85% that involves the teaching others or the immediate application of learning

What difficulties do students typically experience in this area, and how do you plan to anticipate these difficulties?

(Component 1a)

- Many children lack background knowledge to make connections to topics being covered. Slow down and build the base so that higher level learning is accessible to all students. Understand what knowledge and previous experiences students are bringing into the classroom.
- Material must have meaning for the learner ~ leveled appropriately, simple to complex, stretch but don't frustrate.
- Presentation will address different learning styles, engage students with disabilities (9-Types of Curriculum Adaptations)
- Incorporate repeated opportunities to practice and use what they've learned.
- Provide feedback and reinforcement.

Teaching and Learning Experiences:

(Instruction, Performance Tasks, Projects, Academic Prompts to evaluate understanding.)

How do you plan to engage students in the content? What will you do? What will students do? (Time estimates) (Component 1c)

LESSON 1:

- **Culminating Project:** Student Whale Books
- **Book:** *Dear Mr. Blueberry* – On Smart Board
- **United Streaming:** Video Clips (Approx 1 – 3 minutes each)
Humpback Whales, Blue Whales, Whales are Mammals, Whale Songs
- **Forward Looking:** Next week we will read a non-fiction book,
Baby Whales Drink Milk. We will begin recording our “facts about whales” ...

LESSON 2:

- **Book:** *Baby Whales Drink Milk*
- **United Streaming:** Video Clips (Approx 1 – 3 minutes each)
Whales are Mammals, Whale Songs
- **Graphic Organizer:**
Research Organizer – Simple – 4-Up.
Introduce and set-up using feedback about facts recalled learned in last week's book *Dear Mr. Blueberry*, Streaming Videos

LESSON 3:

LESSON 4:

Instructional Strategies / Activities:

LESSON 1:

Introduce Unit – 5 Minutes

- **Share overview** of the 3-4 Week Unit as a road map to culminating project – Student Whale Books – Show sample booklet. Indicate that we will be using notebook computers to complete research graphic organizers to collect facts for our Whale Books. We will create audio recordings along the way to share with the world in the school newspaper – “Learning About Whales”.
- **KWL** - Ask children what they **Know** about whales. (Sea World, Museum of Natural History, Whale Watch etc.) (Digital recording of responses...)
What We Want to Learn about whales. (Digital recording of responses)
Download as mp3's to include in Newspaper – “Learning About Whales” story.

- **Tell them that we will be** “reading” our first book about whales and viewing some video clips of real whales. As we read we will be “collecting facts”. Next week will begin recording those facts.

Book: *Dear Mr. Blueberry* – 20 Minutes

- Tell students that this book is both fiction and non-fiction. (Check for recall: What is fiction vs. non-fiction?).
- Tell students that Mr. Blueberry will be sharing facts about whales when he writes to Emily – “When you hear a fact, quietly raise your hand and then put it down again.”
- Introduce the word “migratory” and “migration” – when you hear the word in Mr. Blueberry’s letter, quietly raise your hand. What strategies can you use to remember this word when I ask you about it next week?
- Read the story....
- Following the story ... What facts did we learn about whales? What happened in this story which could not happen in real life?

IF Time – Else Next Week...

Video Clips: Humpback Whales, Blue Whales – 5 Minutes

- Share the first 2 video clips – background knowledge, story to real world, scientists work.
- Humpback Whales – Talk about scientists who study
- Whales Size – Tongue & Heart – discuss before showing

Select Books – 10 Minutes

Grouping of Students:

- Whole group - literature & multi-media sharing
- Individual and paired work - graphic organizers.
- Individual work & Teacher directed – Whale Book creation

Modifications:

- Take into account ability to attend, read, listen and respond.
- Constant monitoring of group work to ensure students are engaged and participating appropriately.

Grandview Library - Story Time Rubric

	4	3	2	1
Respects Others	Student listens quietly, does not interrupt, and stays in assigned place without distracting fidgeting.	Student listens quietly and does not interrupt. Moves a couple of times, but does not distract others.	Student interrupts once or twice, but comments are relevant. Stays in assigned place without distracting movements.	Student interrupts often by whispering, making comments or noises that distract others OR moves around in ways that distract others.
Participates Willingly	Student routinely volunteers answers to questions and willingly tries to answer questions s/he is asked.	Student volunteers once or twice and willingly tries to all questions s/he is asked.	Student does not volunteer answers, but willingly tries to answer questions s/he is asked.	Student does not willingly participate.
Comprehension - <i>Setting</i> - <i>Event Sequence</i> - <i>Character</i> - <i>Conflict (Problem)</i>	Student seems to understand entire story and accurately answers questions related to the story.	Student seems to understand most of the story and accurately answers questions related to the story.	Student understands some parts of the story and accurately answers at least one basic question related to the story.	Student has trouble understanding or remembering most parts of the story and cannot answer questions related to the story.

Whale Book Project

CATEGORY	4	3	2	1
Focus on Assigned Topic	The entire presentation fully represents the assigned topic and allows the reader to understand much more about the topic.	Most of the presentation is related to the assigned topic. The presentation wanders off at one point, but the reader can still learn something about the topic.	Some of the presentation is related to the assigned topic, but a reader does not learn much about the topic.	No attempt has been made to relate the presentation to the assigned topic.
Writing	Students devote a lot of time and effort to the writing process (prewriting, drafting, reviewing, and editing). Works hard to make the story wonderful.	Students devote sufficient time and effort to the writing process (prewriting, drafting, reviewing, and editing). Works and gets the job done.	Students devote some time and effort to the writing process but was not very thorough. Does enough to get by.	Students devote little time and effort to the writing process. Doesn't seem to care.
Illustrations	Illustrations are detailed, attractive, creative, and relate to the text on the page.	Original illustrations are somewhat detailed, attractive, and relate to the text on the page.	Original illustrations relate to the text on the page.	Illustrations are not present OR they are not original.
Spelling and Punctuation	There are no spelling or punctuation errors in the final draft. Character and place names that the author invented are spelled consistently throughout.	There is one spelling or punctuation error in the final draft.	There are 2-3 spelling and punctuation errors in the final draft.	The final draft has more than 3 spelling and punctuation errors.

W H E R E ORGANIZER

W	How will you help students know where they are headed and why (e.g., major assignments, performance tasks, and the criteria by which the work will be judged)?	
H	How will you hook the student through engaging and thought-provoking experiences (issues, oddities, problems, and challenges) that point toward essential and unit questions, core ideas, and performance tasks?	
E	What learning experiences will engage students in exploring the big ideas and essential and unit questions? What instruction is needed to equip students for the final performances?	
R	How will you cause students to reflect and rethink to dig deeper into the core ideas? How will you guide students in revising and refining their work based on feedback and self-assessment?	
E	How will students exhibit their understanding through final performances and products? How will you guide them in self-evaluation to identify the strengths and weaknesses in their work and set future goals?	

Adapted From:

Understanding By Design Grant Wiggins & Jay McTighe

Concept-Based Curriculum by H. Lynn Erickson / Foreword by Carol Ann Tomlinson c2002

What is concept-based curriculum?

A concept is an idea that is timeless, abstract, broad and can be shown through a variety of examples. Conflict, change and perspective are concepts. Examples of the concept change can be found in social studies (historical events), science (erosion), literature (characters) and mathematics (trading).

Two jobs that concepts have are to focus the study of topics and integrate the curriculum. Looking at a topic through a concept gives the study a focus. For example, the topic fairy tales can be looked at through the concept culture. With this focus, students can study fairy tales from different cultures. They can find similarities and differences in fairy tales in order to understand the effect that culture has on literature. Without the focus of a concept, only factual learning takes place.

Concepts, due to their broad nature, provide opportunities for curriculum integration. Culture could be used to integrate language arts (fairy tales from different countries) with social studies (geography). Also, because concepts are timeless, they are relevant to students' lives. The study of topics, guided by the focus of culture, allows students to develop an understanding and hopefully acceptance of people of different cultures.

Skills are embedded in the study of a topic. For example when studying fairy tales through the concept of culture, map skills can be taught. As students notice cultural elements in fairy tales, they can locate the countries from which the fairy tales originated. Language arts skills can be taught as students write their own fairy tales and compare and contrast versions of fairy tales from different cultures.

When teachers base their instruction on concepts, they can expect their students to learn more than just facts. During a concept-based unit of study, students are given many examples of concepts. Through these examples of concepts from the topic, students notice common elements. Discussion, guided by carefully planned and also spontaneous questions, helps students form generalizations.

A generalization is a statement that shows a relationship between two or more concepts. The formation of a generalization by students is the objective a teacher strives for in her lessons. The ability to generalize using examples from a topic shows that students have achieved genuine understanding. In teaching a fairy tale unit, the teacher would strategically present students with appropriate examples of cultural elements found in fairy tales. Then after discussion, the teacher would guide students to form the generalization, "Literature reflects elements of a culture."

Instruction based on conceptual generalizations is an effective way for students to genuinely understand topics, but more importantly, it is an effective way to teach students to think.

Eight Step Concept-Based Model

Choose a topic to study.

What topics do I teach at my grade level? What topics lend themselves to an in-depth unit of study? Do I have or can I get materials to create an in-depth unit of study on this topic? How can I sequence the topics so that they logically connect to each other in order to enhance understanding for my students?

Decide on a concept.

What concept will focus the study? What concept will give the study a focus that will promote thinking beyond the factual level? What concept do examples from the topic lend themselves to? What concept will allow for integration of the curriculum?

Brainstorm areas of the curriculum that can be integrated in the study of the topic.

What disciplines can be connected to the topic using the concept?
How can I create an in-depth study by tying in topics and resources from other disciplines?

Create generalizations.

What generalizations related to the topic do I want my students to form?
What generalizations can be formed from examples from the topic?
How can I put two or more concepts together to form a relationship that will help my students achieve genuine understanding?
How can I sequence my lessons so that they build toward the formation of a generalization by my students?

Think of questions and use charts.

How can I turn the generalizations that I planned in step four into questions?
What questions will focus my students on the concepts that they will need in order to form generalizations?
What column headings for my chart will focus my students' thinking in order to form a generalization?
What examples from the unit of study will build on each other toward the formation of a generalization as I record them on my chart?

Identify skills.

How can I help my students develop skills in acquiring, organizing and presenting information during the unit of study?
What skills lend themselves to instruction during this unit of study?
How can I incorporate instruction in reading, writing, listening, speaking, critical thinking, problem solving and mathematics skills?
How can technology skills be used to help students acquire, organize and present information?

Plan lessons.

What lessons can I create to help my students learn how to acquire, organize and present information using skills in comprehension, grammar, punctuation, capitalization, spelling, etc. skills? What lessons can I create that will develop higher level thinking skills?

Develop a performance task.

How can I develop a task that will require my students to demonstrate an understanding of a concept used in the study of the topic?
What task that my students will present will show that they have acquired and organized information about the topic?
What understandings and skills do I want to assess in the performance task?
What criteria should I include in a rubric to assess my students' performance task?

EXAMPLE:

CHOOSE A TOPIC: *Native Americans*

DECIDE ON A CONCEPT: *Needs and Wants*

INTEGRATE THE CURRICULUM

Social Studies: economics, U.S. history, geography, natural resources, climate

Language Arts: Research on Native American tribes, Native American legends, paragraph describing how Native Americans satisfied their needs and wants through nature

Fine Arts: diorama depicting Native Americans satisfying needs and wants through nature

Media: Power Point presentation on how Native Americans satisfied their needs and wants through nature

CREATE GENERALIZATIONS

All people have needs and wants. Native Americans satisfied their needs and wants through nature. Geography affects the way people satisfy their needs and wants. The availability of natural resources affects the degree to which people satisfy their needs and wants. Climate affects the way people live. The desire of different groups to satisfy their needs and wants may cause conflict.

THINK OF QUESTIONS AND USE CHARTS

What are needs and wants? Why do people have needs and wants? How did Native Americans satisfy their needs and wants? What things in nature did Native Americans use to satisfy their needs and wants? Where did Native Americans live? What natural resources can be found where Native Americans lived? How does the availability of natural resources affect the degree to which people satisfy their needs and wants? How did geography affect the way Native Americans satisfied their needs and wants? What land forms exist where Native Americans lived? What is the climate in the areas where Native Americans lived? What were the groups who came in contact with the Native Americans? How did the desire of other groups and the Native Americans to satisfy their needs and wants cause conflict?

IDENTIFY SKILLS

Acquire information: reading comprehension to access important facts, note taking, inferencing, drawing conclusions, discussion

Organizing information: writing, English grammar and mechanics

Presenting information: diorama, paragraph, Power Point

PLAN LESSONS

K-W-L, vocabulary development (context clues, word sorts, etc.), main idea, literature circles, writing process, higher level thinking

DEVELOP A PERFORMANCE TASK AND RUBRIC

Diorama with written paragraph describing how Native Americans used nature to satisfy their needs and wants.

From: <http://www.d118.s-cook.k12.il.us/central/curriculum/what.html>

W H E R E - EXAMPLE

W	How will you help students know where they are headed and why (e.g., major assignments, performance tasks, and the criteria by which the work will be judged)?	<ul style="list-style-type: none">▪ Post essential questions on bulletin board.▪ Present description of the performance tasks early in the unit, along with scoring rubrics.
H	How will you hook the student through engaging and thought-provoking experiences (issues, oddities, problems, and challenges) that point toward essential and unit questions, core ideas, and performance tasks?	<ul style="list-style-type: none">▪ Begin unit with a “mystery” – for example, the seafarers’ disease (scurvy_ that cleared up once fresh fruits and vegetables were consumed. This mystery serves as a doorway into exploration of the unit question.
E	What learning experiences will engage students in exploring the big ideas and essential and unit questions? What instruction is needed to equip students for the final performances?	<ul style="list-style-type: none">▪ The performance tasks are relevant, real-world applications of nutrition knowledge.▪ The planned learning activities and lessons (e.g. guest speaker) will support work on tasks.
R	How will you cause students to reflect and rethink to dig deeper into the core ideas? How will you guide students in revising and refining their work based on feedback and self-assessment?	<ul style="list-style-type: none">▪ Students evaluate hypothetical family diets for nutritional balance, then reflect on their own eating habits.▪ Students will have an opportunity to revise their health brochures based on peer review.
E	How will students exhibit their understanding through final performances and products? How will you guide them in self-evaluation to identify the strengths and weaknesses in their work and set future goals?	<ul style="list-style-type: none">▪ The tasks (illustrated brochure and camp menu) will provide evidence of understanding.▪ Students self-evaluate their task and project using the rubrics.▪ Unit concludes with student self-assessment on their own healthy eating.