

Best Practices of Technology Integration

Title: Whale of a Web Site
<http://www.remc12.k12.mi.us/techp22/index.html>

Submitted by:

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Subject Areas: Science, Math, Art, Creative Writing & Research Skills

Intended Grade Level: Later Elementary

Description: The purpose of the web-design on whales is to learn facts about whales and to increase their vocabulary words. In the regular fourth grade science textbook, „Horizons by Silver Burdett Ginn, the introduction chapter is on whales. While studying whales, students will apply their knowledge and comprehension of whales to other academic and skill areas, such as creative writing, math, art and research.

Narrative: In terms of the learner behaviors, the students compare and contrast differences and likeness of whales/fish and toothed/baleen whales. Students discuss what they know about whales and what they would like to learn about whales. In addition students describe the characteristics of a mammal. For the learner the outcome domain is the cognitive of Bloom,s level of taxonomy. The learner uses resources for gathering information on whales and are assigned internet and classroom activities to apply their knowledge and comprehension on whales.

The instructional procedures that will help learners meet the objectives is using the lesson design paradigm of Robert Gagne. Students will gain interest as the teacher reads and displays whale books, whale videos, and designs a bulletin board. A Whale of a Good Job in the classroom. In addition, the teacher will have a group discussion on whales and shared that their teacher has created a whale web site for them to access.

In conducting assessment students were very excited about accessing the internet and linking to other web sites. They commented that A Whale of a Web Site was cool, fun,

liked the pictures of the whales and fish, enjoyed the sounds of the whales and liked working with a partner.

Because of the students limited experiences in being on the web, the graphics were very useful when giving instructions. Secondly, the students were very excited about the whale activities and needed to learn that words underlined link to another web page/web site; to learn the pointer switches to a hand is active; and to understand the meaning of downloading. Thirdly, the graphics, video clips, whale sounds and whale activities contribute to students learning about whales. It was difficult for some students to read the text because of their low reading ability. The teacher and the paraprofessional read the text and whale quizzes to the students. Lastly, the students truly enjoyed the interactive web pages, student activities and selecting their web pages/web sites. Students did gain in learning facts about whales and the meaning of the whale vocabulary (words. In addition, the students wanted to learn the differences between whales and sharks on the Whaletimes web site.

Curriculum Benchmarks:

MI.SCI.III.2.E.1 Compare and classify familiar organisms on the basis of observable physical characteristics. (Key concepts: Plant and animal parts—backbone, skin, shell, limbs, roots, leaves, stems, flowers. Real-world contexts: Animals that look similar—snakes, worms, millipedes; flowering and non-flowering plants; pine tree, oak tree, rose, algae.)

MI.SCI.II.1.E.2 Show how science concepts can be interpreted through creative expression such as language arts and fine arts. (Key concepts: Poetry, expository work, painting, drawing, music, diagrams, graphs, charts. Real-world contexts: Explaining simple experiments using paintings and drawings; describing natural phenomena scientifically and poetically.)

MI.MAT.V.1.E.2 Develop and apply the appropriate method of computation from among mental computation, estimation, paper-and-pencil or calculators; explain why they are choosing a method and how they know which operations to perform in a given situation.

Michigan Department of Education - Instructional Technology Across the Curriculum (ITAC) K-12 Instructional Technology Standards:

Elementary Online Telecommunications Benchmarks for Later Elementary - Content: Introduce on-line; Access through signing on and off; Learn acceptable use of communication; Knowledge of individual software; Application: Research.

Elementary Integration Into All Content Areas: Telecommunications for research; Instructional resources on videotape & web-based Review of basic skills and concepts using computer-based resources.

Total amount of time for lesson: Whales will be a special project for one month. The teacher will plan and schedule times for the students to access the internet for whale activities during classroom times for at least 30 minutes during the week with a partner. The paraprofessional in the classroom will assist students as needed
Materials/Hardware/Software:

Materials:

Web-based activities/assessment on whales

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Whales books, such as: Undersea Giants by Young Discovery Library - Published in the U.S. by Marboro Books

A Unit About Whales: Literature, Science Facts, Creative Writing, Research Skills, Art and Math by Evan-Moor Corp. (Grades 3-6) - Jo Ellen Moore, Joy Evans & Leslie Tryon: Zoobooks:

Whales - published by Wildlife Education, Ltd.; Current news about whales on the web, such as : The Free Willy Keiko – <http://www.keiko.org/>

Whale videos; Fourth Grade science textbook, Horizons by Silver Burdett Ginn, the introduction chapter is on whales.

Hardware: PC or Mac Computer; LCD Panel or a data/video projector, if available

Software: Internet connection, such as Internet Explorer or Netscape Navigator;
Download plug-ins for video & audio clips: Real Player 5.0; MS Window Media Player 5.2; QuickTime 3.0 and WinZip or Stuff-It from
these web sites:

<http://www.download.com>

<http://www.shareware.com>

Whale of a Web Site created by Microsoft FrontPage98-requires Windows 95 or Windows NT

Teacher Preparation: In addition to reading the introduction chapter on whales in their science textbooks and having a classroom discussion, the teacher will role model how to access the internet on whales; explain email and demonstrate how to locate various whale web sites and successfully access the „Whale of a Web Site and send an email message individually or with a partner and experience using various web pages. The web pages will consist of descriptions, characteristics and a list of toothed/baleen whales. Students will, also, listen to clips of whale sounds, watch video clips of whales, participate in student activities and whale projects, such as body parts of whale, whale math problems, whale word search, whale quizzes, etc. by locating whale web sites on the links/activities web page. In addition students will learn the meaning of whale words and be involved in a problem solving of saving whales based on what they have learned.

Prerequisite Student Skills: In the past students have demonstrated an interest in science and having the opportunity to access the internet and using the computer. Students know how to scroll up & down a web page, to click and hold, to access the internet, to locate and link to web sites and to learn the basics of using a computer. Teacher will need to screen the students for matching their computer skills and abilities as well as their academic abilities.

In describing the learners and in designing the web product on whales, the multiple intelligence's theory by Dr. Howard Gardner was taken in to consideration for individual differences in learning. They learned best by multi-sensory approach and concrete teaching. Some of the students can express their ideas very well verbally while others do well by drawing, acting or creating a product.

Student Activities/Procedures: Students will access the internet while other students are reading books on whales, writing whale reports, making paper whales, calculating whale math problems, doing a whale crossword puzzle or a sea mammal word search, viewing a whale video and other related whales activities, etc. The teacher will plan and schedule times for the students to access the internet for whale activities during classroom times for at least 30 minutes during the week with a partner or a small group of 3 to 4 students.

Assessment/Evaluation: In a group discussion the teacher lists what the students know about whales and what they want to learn about whales on poster paper, which will be displayed in the classroom. After the students have experienced using the whale web sites, they will access the Whale Quiz web page and answer at least four of the six questions on whales by email responses, using the Venn Diagram for comparing/contrasting, printing their answers to the Whale Quiz - True or False or printing their lists of toothed/baleen whales on the Excel spreadsheets.

Follow-up Activities: The web product on whales added to the introduction chapter on whales in their regular education science book and the current event news on the whale, Keiko, being transferred to Iceland. Students applied their knowledge and comprehension of whales to other classroom assignments, such as creative writing, storyboard writings, journals, art, whale math problems, whale word search, and group discussions. Students truly enjoyed this experience!