

Instructional Recipe

How is the Rainforest Like a Natural Pharmacy?

8th Grade
Science/Language Arts

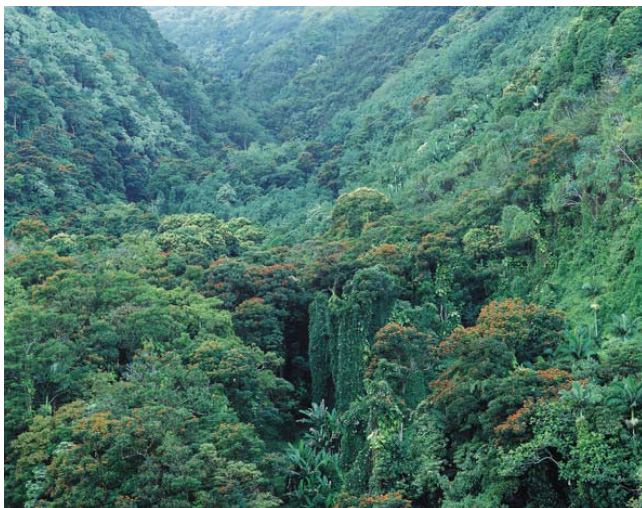


Online research and information resources available through a partnership between the Texas State Library and Archives Commission, the Texas Education Agency and Education Service Center, Region 20
<http://web.esc20.net/k12databases>

Step 1 – Ask

Objectives: Students will research a real-world issue using multiple resources. Students will gather and organize notes from their research and produce a magazine article about their topic.

Introduction: Rainforests, often referred to as jungles, are the home of a wide variety of flora and fauna. Cashews, bananas, avocados, pineapples, peppers and cacao are a few examples of rainforest plants consumed by humans. Researchers say that for every plant that we know about in the rainforest, there are at least twenty other yet to be discovered. Plants have been used for medicinal purposes by indigenous peoples for many generations, and more recently scientists have discovered more rainforest plants that can cure diseases and ailments



“Rainforest Valley.” Online Photograph. EBSCO Image Collection. 13 Oct. 2008
< <http://search.ebscohost.com/login.aspx?direct=true&db=imh&AN=imh346831&site=srck5-live>>

Ask:

- ★ How many species of plants are in the rainforest?
- ★ What types of plants are currently used in medicines?
- ★ What kinds of diseases can be cured with rainforest plants?
- ★ Why is it so important to protect our rainforests?

Vocabulary

- ★ **Ethnobotanist** – a scientist who studies the way people use plants.

Science TEKS:

(14) **Science concepts.** The student knows that natural events and human activities can alter Earth systems. (B) analyze how natural or human events may have contributed to the extinction of some species; and

Language Arts TEKS:

(22) **Research/Research Plan.** (B) apply steps for obtaining and evaluating information from a wide variety of sources and create a written plan after preliminary research in reference works and additional text searches.

(23) **Research/Gathering Sources.**

(A) follow the research plan to gather information from a range of relevant print and electronic sources using advanced search strategies; (B) categorize information thematically in order to see the larger constructs inherent in the information; (C) record bibliographic information (e.g., author, title, page number) for all notes and sources according to a standard format; and (D) differentiate between paraphrasing and plagiarism and identify the importance of using valid and reliable sources.

(24) **Research/Synthesizing Information.** (A) narrow or broaden the major research question, if necessary, based on further research and investigation; and (B) utilize elements that demonstrate the reliability and validity of the sources used (e.g., publication date, coverage, language, point of view) and explain why one source is more useful and relevant than another.

(25) **Research/Organizing and Presenting Ideas.** (A) draws conclusions and summarizes or paraphrases the findings in a systematic way; (B) marshals evidence to explain the topic and gives relevant reasons for conclusions; (C) presents the findings in a meaningful format; and (D) follows accepted formats for integrating quotations and citations into the written text to maintain a flow of ideas.

Step 2 – Investigate

K-12 Database Resources: Suggested search - rainforest AND medicine;

- ★ [British team finds 50 new forest species](#). By: Mark Henderson, Science Correspondent. Times, The (United Kingdom), 08/20/2004; (AN 7EH3551482655)
- ★ [Crops as medicine](#). Monkeyshines on America, Jan2000 Land & Crops Issue, p29, 1p; Reading Level (Lexile): 1300; (AN 3652336)
- ★ [Rainforest Rx](#). (cover story) By: Wallace, J.. Sierra, Jul/Aug91, Vol. 76 Issue 4, p36, 6p, 5 illustrations, 6c; (AN 9109021830)
- ★ "rainforest." Compton's by Britannica. 2008. Encyclopædia Britannica Online School Edition. 13 Oct. 2008 <<http://school.eb.com/comptons/article-203322>>.

Additional Websites:

- ★ Rainforest Plants - http://www.blueplanetbiomes.org/rnfrst_plant_page.htm
- ★ Rainforest Education - <http://www.rainforesteducation.com/>

Books:

Powledge, Fred. Pharmacy in the Forest: How Medicines are Found in the Natural World. New York: Atheneum, 1998.

Step 3 – Create

Students should record and organize their notes into a concept map or outline. They should include information about various species of rainforest plants and how they are used in different medicines.

🔗 Technology Link - Use a graphic organizer program, such as <http://bubbl.us>, <http://mywebspiration.com>, or Inspiration to create the concept map or outline.

Technology Application TEKS:

(4) Information acquisition

(B) apply appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies

(6) Information acquisition

(B) resolve information conflicts and validate information through accessing, researching, and comparing data

(7) Solving problems

(A) plan, create, and edit documents created with a word processor using readable fonts, alignment, page setup, tabs, and ruler settings. (G) integrate two or more productivity tools into a document including, but not limited to, tables, charts and graphs, graphics from paint or draw programs, and mail merge

(11) Communication

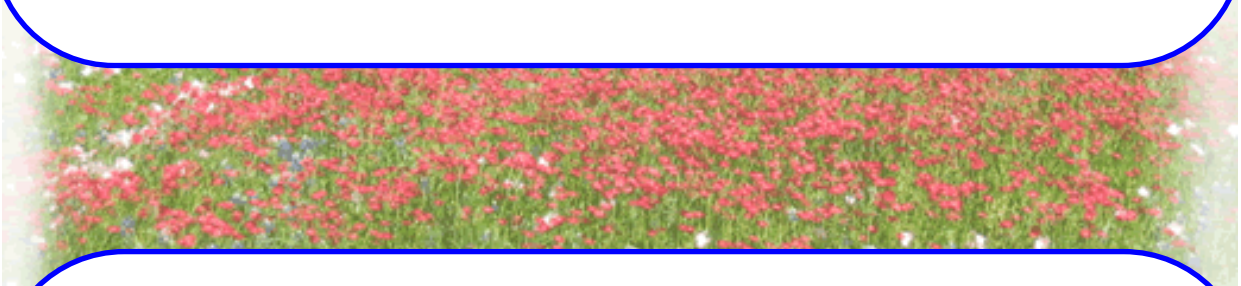
(A) publish in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video

Step 4 – Discuss

Students may complete the following activity independently or with a small group:

- ★ You have been selected to be part of a scientific expedition headed to the Amazon. As a National Geographic journalist traveling with a team of ethnobotanists, your job is to document all activities and discoveries performed by your peers. Your publisher is especially interested in rainforest plants that can be used to improve human health conditions. Write a magazine article that describes the journey as well as the discoveries made. You may want to include information on local indigenous tribes and how they use such plants for their own needs. Choose a catchy title and add illustrations to your article.

🔗 Technology Link – Use a desktop publishing program, such as Microsoft Publisher or Apple Works, to create the magazine article.



Step 5 – Reflect

Allow students to share their articles with the rest of the class. Use the following suggested rubric to assess the students' work. Make sure that the students are familiar with the rubric *before* they begin creating their project. They should refer to the rubric repeatedly to monitor their progress in creating their project.

🔗 Technology Link: You can also create your own rubric with your students at <http://rubistar.4teachers.org/index.php>.

Magazine Article

CATEGORY	4	3	2	1
Notes	Notes are recorded and organized in an extremely neat and orderly fashion.	Notes are recorded legibly and are somewhat organized.	Notes are recorded.	Notes are recorded only with peer/teacher assistance and reminders.
Quality of Information	Information clearly relates to the main topic. It includes several supporting details and/or examples.	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.	Information clearly relates to the main topic. No details and/or examples are given.	Information has little or nothing to do with the main topic.
Mechanics	No grammatical, spelling or punctuation errors.	Almost no grammatical, spelling or punctuation errors	A few grammatical spelling, or punctuation errors.	Many grammatical, spelling, or punctuation errors.
Sources	All sources (information and graphics) are accurately documented in the desired format.	All sources (information and graphics) are accurately documented, but a few are not in the desired format.	All sources (information and graphics) are accurately documented, but many are not in the desired format.	Some sources are not accurately documented.
Attractiveness	Diagrams and illustrations are neat, accurate and add to the reader's understanding of the topic. Article is enhanced by appropriate use of fonts, colors, images, and format.	Diagrams and illustrations are accurate and add to the reader's understanding of the topic. Article is somewhat enhanced by appropriate use of fonts, colors, images, and format.	Diagrams and illustrations are neat and accurate and sometimes add to the reader's understanding of the topic. Article has very little use of fonts, colors, images, and format.	Diagrams and illustrations are not accurate OR do not add to the reader's understanding of the topic. Article lacks appropriate use of fonts, colors, images, and format.