

# Plant Classification

Contributed by Deb Dommel

## Plant Classification Web quest

Adapted from [http://www.chimacum.wednet.edu/cms/classpages/plant\\_webquest.html](http://www.chimacum.wednet.edu/cms/classpages/plant_webquest.html)

Introduction: Your church is planning a working mission trip to an island people, who have had little contact with the world outside their island. The island is experiencing drastic climatic changes, changing from a tropical climate to an island with a climate similar to Nebraska. They have discovered that if they don't begin growing different plants within the next few months, their entire food web will disintegrate and all life on their island will cease to exist. The Islanders are depending on your team to give them the knowledge that they need to grow the plants needed in this new climate.

{mospagebreak title=Your Task}

Your Task: Your job is to teach the Islanders about new plants and the best way to grow plants. Since the island is virtually without electricity, and the Internet is not accessible on the island, you will need to do all your research prior to going to the island. The only thing you will be able to take with you will be the hand written journal that your team will create for the people. Technology will be available for research only, all other parts of the task need to be hand written or hand drawn.

The following items should be included in your journal to the Islanders:

-

Explain the uses for plants.

-

Explain how scientists classify plants.

-

Describe the parts of a plant - include a diagram, labeling each section and listing its function.

-

Diagram of Leaf of leaf shape, margin, grouping and venation - Step 3.

-

Parts of the flower - with explanation of function.

-

Parts of a plant (general) with explanation of function.

-

Describe pollination - the life cycle of the flower. Include an explanation of annual, perennial and biennial.

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Explain the process of photosynthesis and transpiration.

-

Design a garden - use six different plants and position them in the most effective areas. You should include plants that will provide food, as well as some that are merely for beauty.

{mospagebreak title=Process}

Process: Each team will research the above tasks. Your answers must be completed in the above order in your journal. Journals are to be kept on notebook paper, be neatly hand written by you. Drawings should be done in pencil. Your team will only be required to complete one journal so you must work together on this. You must have complete sentences and your diagrams should be neat and clearly labeled. Your team will be responsible for spelling, especially when your team directly copies from your resources. Look at the evaluation for a clear picture as to how you can earn an A!

**Step 1:**

Start by completing The Great Plant Escape! Complete the written activities on a sheet of notebook paper rather than printing out the pages as directed. Activities that are hands on - read through them, but do not complete. You may print the crossword, complete and turn it in. When finished see me, before printing the certificate. Go on to Step 2 when you are done.

**Step 2:**

Go to Trees of the Pacific Northwest. To learn more about some common conifers in the Pacific Northwest use the dichotomous key to identify a tree specimen. Go to the dichotomous key and at each step make a selection - see what tree you have chosen. Do this for about 5-8 trees, making different choices each time. Discover the identity of a mystery tree! To identify the mystery trees - get a mystery tree page from the folder in the front of the classroom. Using the information on the sheet and the dichotomous key identify the tree. Write down your answers on a sheet of paper and turn it in to me when you have identified all 8 trees.

**Step 3:**

For each of the following documents, open them one at a time and copy what's there into your journal. Divide the drawing tasks among the members of your group. These pages will become part of your final journal. (Draw the leaves the best you can.):

Leaf Shapes

Leaf Margins

Groupings

Venation

#### Step 4:

##### Divide the Labor.

- Each person should be responsible for an equal number of questions from the task. Being responsible means that you will be in charge of the mouse and keyboard while researching. The other member(s) of the group should be writing the information "in your own words".
- While one person is researching, the other partner(s) should support the researcher by helping to paraphrase the information and writing it in the journal. In other words, you are never to work alone while your partner(s) does nothing.
- Be sure to start each section on a new page and title the page. The pages you write will become part of your journal.
- Use the resources listed below. If you can't find the answer to a question, do a Goggle search to answer your question.

When you have researched all information and have all pages of your journal:

- place the pages in the order of the tasks
- number the pages (front and back) begin with page 5 (Page 1 = title page, Page 3 = Table of Contents)
- create a table of contents for your journal
- create a Title page/Cover for your journal
- assemble your journal and staple with 2 staples along the side, so it opens like a book.

Step 5: When you are done with your journal evaluate yourselves and your work.

{mospagebreak title=Resources}

#### Resources:

All About Plants

Growing Information - Hydroponics

My First Garden

Plant Life Cycle

Plant Parts

Plant Classification Quiz

{mospagebreak title=Evaluation}

Evaluation:

Rubric: Use the following rubrics to score your final product. Here is a research rubric.

Questions

9-10 Points

7-8 Points

5-6 Points

3-4 Points

1-2 Points

1

10 or more uses / sent. Are neat & complete

7-9 factors, sent. Are neat & complete

4-6 factors, sent. Are neat or complete

2-3 factors, sent. Are neat or complete

1 factor, sent. Are neat or complete

2

Includes the 3 or 4 correct branchings that Botanists use to classify plants. Are neat & complete

The 3 or 4 correct branchings that Botanists use to classify plants are either missing one or one is wrong. Are neat & complete

Only 2 correct branchings that Botanists use to classify plants. Are neat or complete

Only 1 correct branching that Botanists use to classify plants are identified. Are neat or complete

Did not correctly identify how Botanists classify plants.

3-1

All Leaf shapes (6), margins (6), groupings (5) and venation (3) are neat and complete

Missing 1-3 of the following Leaf shapes (6), margins (6), groupings (5) and venation (3) and are neat

Missing 4-8 of the following Leaf shapes (6), margins (6), groupings (5) and venation (3) OR are not neat

Missing 9-10 of the following Leaf shapes (6), margins (6), groupings (5) and venation (3) and are not neat

Missing more than 10 of the following Leaf shapes (6), margins (6), groupings (5) and venation (3) and are not neat

3-2

All 10 parts of the flower are labeled, diagrammed. Sentences explaining function. Neat and complete

9-10 parts of the flower are labeled OR diagrammed. Sentences explaining function. Neat.

7-8 parts of the flower are labeled OR diagrammed. Explanation of function not in complete sentences

5-6 parts of the flower are labeled OR diagrammed. Explanation of function incomplete

Less than 5 parts of the flower labeled or diagrammed. No explanation of function

3-3

All 5 Parts of the plant are labeled, diagrammed. Sentences explaining function

Neat and complete

4 parts of the plant are labeled and diagrammed. Sentences explaining function

Neat

3 parts of the plant labeled OR diagrammed. Explanation of function not in complete sentences

2 parts of the plant labeled OR diagrammed. Explanation of function incomplete

Only 1 part of the plant labeled OR diagrammed. No explanation of function

4

Complete process is explained. Includes definitions of 3 life cycles Sentences are neat & complete

Complete process is explained. Includes definitons of 2 life cycles Sentences are neat OR complete

Complete process is explained. Includes only 1 life cycle. Sentences are neat OR complete

Part of the process is explained. No definitions included. Sentences are neat OR complete

Part of the process is explained, but not in sentence form.

5

Explained the process of photosynthesis, Transpiration, sent. Are neat & complete

Explained the process of photosynthesis, Transpiration, sent. Are neat or complete

Explained the process of photosynthesis or transpiration, sent. Are neat and complete

Explained the process of photosynthesis or transpiration, sent. Are neat and complete

Attempted to describe photosynthesis, transpiration - sent. Incomplete, not neat

6

Designed a garden - used 6 plants/used learned techniques (more than 6 plants will be worth extra credit - not much).

Designed a garden using 5-6 plants/ used learned techniques

Designed a garden using 3-4 plants / used some learned techniques

Designed a garden using 2 plants / used limited learned techniques

Designed a garden using 1 plant, used limited learned techniques

74-80 = Excellent, 69-73 = Good job, 60-68 = You might need more research to make your brochure better, 59 or less = You need to redo your research and redo your brochure completely.

{mospagebreak title=Self-Evaluation}

SELF EVALUATION: Answer the following questions:

- How did you use your class time? Briefly describe your daily activities.
- How did you work with your team?
  - Did you share information and responsibilities?
  - Describe how you broke up the responsibilities.
- If you were to do this same project again, what would you do differently? What would make this a more meaningful activity for you?

Rate yourself on the following Teamwork Skills rubric.

## CATEGORY

Excellent 4

Good 3

Needs Improve 2

Poor 1

### Contributions

Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort.

Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!

Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.

Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.

### Quality of Work

Provides work of the highest quality.

Provides high quality work.

Provides work that occasionally needs to be checked/redone by other group members to ensure quality.

Provides work that usually needs to be checked/redone by others to ensure quality.

#### Time-management

Routinely uses time well throughout the project to ensure things get done on time. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.

Usually uses time well throughout the project, but may have procrastinated on one thing. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.

Tends to procrastinate, but always gets things done by the deadlines. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.

Rarely gets things done by the deadlines AND group has to adjust deadlines or work responsibilities because of this person's inadequate time management.

#### Working with Others

Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.

Usually listens to, shares, with, and supports the efforts of others. Does not cause "waves" in the group.

Often listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.

Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.

#### Monitors Group Effectiveness

Routinely monitors the effectiveness of the group, and makes suggestions to make it more effective.

Routinely monitors the effectiveness of the group and works to make the group more effective.

Occasionally monitors the effectiveness of the group and works to make the group more effective.

Rarely monitors the effectiveness of the group and does not work to make it more effective.

18 to 20 = Excellent team member, 14 to 17 = Good team member, 12 to 13 = You need to work on being a better team member, 11 or less = You weren't much help or you didn't do much, hey, maybe you were absent a lot.