

## LESSON PLAN: MARIANA ISLANDS' MEDICINAL PLANT PROJECT

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Developed by Mary Garvilles through the Ecology of Bird Loss Research Experience for Teachers program- July 28, 2011.

### Lesson Overview:

Students will identify local plants from the Mariana Islands that are used for their medicinal properties. Students will create a TV commercial demonstrating how the medicinal plant is prepared and how it is used to cure specific ailments. Students will obtain their information by interviewing elders from the community, reading scientific papers or books and using other sources found on the internet. This lesson will instill an appreciation of native medicinal plants and will develop knowledge in preserving and protecting the limestone forests of the Mariana Islands.

### Learning Objectives:

Upon completion of this lesson students will be able to:

- Make an interview with elders or local healers from the community about the topical and internal treatments that can be made from locally available plants.
- Read scientific papers, journals or books and utilize the internet to gather information.
- Demonstrate the skill of how the local plant is prepared and used as medicine.
- Create a TV commercial using Moviemaker or Powerpoint advertising the medicinal product.
- Create a poster displaying information and illustrations of the medicinal plant.
- Identify at least one plant from the Mariana Islands
- Explain the importance of preserving intact natural areas to maintain the source of traditional medicines.
- Gain pride and respect for knowledge of the flora and fauna in the Marianas.

**Time Frame:** 1-2 days of research and 2-3 days creating poster board and filming commercial

### Materials:

- Grandparents, local healers, or elders from the community
- Books, scientific journals and other sources of information through the Internet
- Computers with Internet connection and access to Powerpoint or Moviemaker
- Video camera or regular camera to film commercial ad
- Poster board to prepare an informative poster on one specific medicinal plant
- Other materials needed by students to create a sample of how the local plant is used on an actual person (e.g. cup to drink tea leaf after its been boiled (internal treatment), tools to grind plant to make it a powdery or paste-like texture to use as an ointment or rub, (topical treatment)

### Procedure:

- 1) Anticipatory set/introduction to topic: Students engage in a discussion of natural remedies of which they already have knowledge. Students from different cultural backgrounds can share personal experiences when they or another family member used remedies from natural sources. Ask whether any have visited a suruhano (local healer). This discussion should help in promoting *cultural pride and self-esteem*.
  - a) Here are some examples of ailments medicinal plants have been used for:
    - Sleeplessness
    - Lack of energy

- Headache
- Stomach ache
- Allergy
- Depression
- Weight gain
- Weight loss
- Beauty (make-up, hair products, deodorants, etc.)
- Build immune system
- Diabetes
- High cholesterol
- Anemia
- Detoxification

- 2) The students will watch two YouTube videos about medicinal plants
  - a) This video shows shaman searching the rainforest of Paraguay for medicinal cures:
    - i) <http://www.youtube.com/watch?v=RbxT2-jAQzE>
  - b) This video is about medicinal plants and what they do:
    - i) <http://www.youtube.com/watch?v=Pmyn6trPpjo>
- 3) Divide the students in groups of 2-3 and give each group the name of a local medicinal plant. Consult list below and in resource section at end of this book. Students must research their medicinal plant using the library, the internet, provided books and scientific papers. Students must also interview at least one member of the community, such as an elder or suruhano, about the plant's natural remedies.

*i) Selected list of medicinal plants of the Mariana Islands:*

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|---|---|
| * <b>Morinda citrifolia</b> ('Ladda')         | * <b>Peperomia mariannensis</b> (Potpopot)  |
| * <b>Canavalia megalantha</b> (Akangkan)      | * <b>Carica papaya</b> (papaya)             |
| * <b>Premna obtusifolia</b> (Ahgao)           | * <b>Maytenus thompsonii</b> (Luluhot)      |
| * <b>Erythrina variegata</b> (Gaogao),        | * <b>Asplenium nidus</b> (GalakDangkulo)    |
| * <b>Cassia occidentalis</b> (Tumaga)         | * <b>Abrus precatorius</b> (Kulales)        |
| * <b>Davalia solida</b> (Pugua' Machena)      | * <b>Phylomatodes scolopendria</b> (kahlao) |
| * <b>Phyllanthus marianus</b> (Gaogao Uchan)  | * <b>Guettarda speciosa</b> (Panao)         |
| * <b>Ficus prolixa</b> (Nunu)                 | * <b>Aidia cochinchinensis</b> (Sumak)      |
| * <b>Microsorium punctatum</b> (Galak Dikike) |   |

- 4) Option 1: Posterboard
  - a) Have students create a poster board displaying the medicinal plant's information and illustration (See the evaluation section below for the required information)
- 5) Option 2: TV commercial
  - a) Have students watch a TV commercial on Aspirin, Salonpas and Tiger Balm to get an idea of how to create their commercial. Below are links to some sample commercial videos:
    - i) Asprin --- <http://www.youtube.com/watch?v=Wn-fhDBw4-o>
    - ii) Tiger Balm --- <http://www.youtube.com/watch?v=ESxJkUu3K2k&feature=related>
    - iii) Salon Pas --- <http://www.youtube.com/watch?v=Nskp9GDzmgw>
  - b) Students must then create a TV commercial of a person acting out an ailment and demonstrating how the local plant is used as medicine to cure such aches or pains. They must first write a script about what ailment a person (the actor) has, and then

show how it was cured by the medicinal plant. The group must practice their scripts until they are fully memorized.

- c) Students must demonstrate how the medicinal plant is prepared, and how it is taken or used (e.g. internally or topically). The medicinal product can be “fake” – for example, students can use baby powder or juice as a liquid visual for the medicinal sample. The medicinal product can also be a real sample – for example, students can brew tea from the leaves ahead of time and pour it into a glass or plastic type empty water bottle. Do not allow students to ingest anything that could potentially be dangerous.
  - d) The actors could be members of the group or anyone they choose that is willing to volunteer for their project (bonus: include the elder they interviewed in ad).
  - e) The skit must be approved before it is videotaped; any inappropriate actions will result in point deductions from their final grade.
  - f) Students can use a regular camera or video camera to shoot their commercial.
  - g) Have students edit their videos using windows moviemaker or any other video editing software.
  - h) Students must turn in a bibliography to show the sources they used for their commercial.
- 6) Presentations: Have students present their poster board display and play their TV commercials in class. Videos can also be shown during a school program, parent-teacher meetings, science fair or conferences, and during the Earth day festival.

**Evaluation:**

The poster board or commercial are evaluated on the basis of a rubric (attached) with the following criteria:

- a) Do you think other parts of the world besides the Marianas can benefit from this plant?
- b) If more studies were done on this plant do you think it can be made into a conventional form of medicine (e.g. Aspirin) one day?
- c) What if this plant no longer existed because of habitat destruction or an invasive species? What loss would our Islands' have?
- d) Presence and completeness of bibliography
- e) Overall organization of contents and appearance/ aesthetics of the poster board or commercial .