Looking for the Key to Wetland Plants

Dear Presenter,

This is a 20 to 25 minute presentation and HANDS-ON outside activity for approximately 25-30 ten year-old children. You MUST do this activity at home BEFORE you attempt to lead the activity during the Water Festival.

As each new group of students arrive, find the classroom teacher, introduce yourself, and let the teacher know this is a hands-on activity and you will need assistance from him/her. If you do not ask for assistance, the teacher will assume that YOU are the EXPERT and they are the observer! Plan when you will ask the teacher for assistance! DO NOT hesitate to call the teacher by name and politely ask for their assistance with ANY of your needs.

As each session begins, introduce yourself to the students. "Good morning, my name is ….. and I work for…., I am a ….. or simply I am happy to be here today." Then introduce the topic of this presentation. Each step of this presentation is explained in this packet. These are recommended guidelines and do not have to be followed exactly word for word. However, you may present this material just as written. Feel free to personalize the presentation to suit you, if necessary.

Thank you for volunteering to present "Looking for the Key to Wetlands Plants." Have fun, enjoy yourself, and we hope you will consider volunteering again next year.

Big Sioux Water Festival

Looking for the Key to Wetland Plants

Background

Background information is provided as a basic overview with both general and specific information. Share this information with the students throughout the presentation.

Wetland plants make special adaptations to the wet and often harsh conditions in which they live. These specially-adapted plants thrive, assisting in the proper functioning of wetlands by improving water quality and providing food and cover for numerous species of animals. Above all, wetland plants are truly unique and fascinating, and they are part of what makes wetlands so beautiful!

Plants are often used to identify an area as a wetland, but an area remains a wetland even if the plants are removed (as long as wetness and wetland soils remain). Learning to identify wetland plants can be fun. To identify plants, students will need to know the following:

- A dichotomous key provides a series of opposing choices leading to the identity of an unknown.
- A plant does not always look the same—it may change with the seasons. In winter, most soft plants die back, though some leave behind woody stalks. Many trees and shrubs do not have leaves in winter; though some do (needles are leaves). A plant that keeps its leaves all winter is an evergreen. A plant that loses its leaves is deciduous.
- Many plants do grow flowers, even if we do not call the plant a flower. Flowers appear before fruits develop, and seeds come from the fruits. Even lawn grass grows flowers if it's not mowed.
- Leaves and twigs are arranged in different patterns on different plants. They may be opposite, which means that they grow out of the same place on the stem, but on opposite sides. Alternate leaves also grow on alternate sides of the stem, but at alternating elevations along its length. Whorled leaves grow out of the same place on the stem all the way around, like the spokes of a wheel.

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- Leaves may be simple (one leaf per stem) or compound. A compound leaf has several leaflets on a stem arranged in the shape of a hand (palmate) or a feather (pinnate). Individual leaves may also have palmate or pinnate patterns.
- The shape and edges of leaves are important identifying features. Leaves may be round, oval, long, pointy, lobed, etc.; edges may be smooth (called entire), hairy, toothed (jagged, like a steak knife), wavy, etc. Look very closely!

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Vocabulary

Vocabulary Terms: (Hint: Do not assume the students will know the meanings of the following words.)

- dichotomous key- a key for identifying of organisms based on their physical features and other characteristics
- emergent plant- plant that grows in wetlands or other waterbodies that grows above the surface
- shrub-A woody plant of relatively low height, having several stems arising from the base and lacking a single trunk
- vine-A weak-stemmed plant that derives its support from climbing, twining, or creeping along a surface
- wetland-A lowland area, such as a marsh or swamp, that is contains water for most of the year

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Materials List

(For 6 presentations with approximately 25-30 students per session)

Consumables

- 10 rolls of double-sided tape
- Characteristic List (180)
- Leaf cutouts (180)
- 30 black markers
- 30 pencils
- "What Type of Plant Is It" worksheet (180)
- Key To Emergent Plants worksheet (180)
- Garbage bags

Non-consumables

- Laminated Plains Cottonwood Tree banner (66 W x 72 L)
- Four 3M Hangers for wall
- Four 1" Binder Clips
- Four 1 Loose-Leaf metal rings
- 10 supplies holders
- Presenter Notebook, cue cards, etc.
- Laminated pictures of wetland plants
- Plant facts (to be placed on the back of each picture of the wetlands plants prior to laminating)
- 30 scissors
- Tape Dispensers (10)
- Leaf pattern
- Rubbermaid container to hold leaves
- Rubbermaid container to hold markers
- Large Rubbermaid container for the kit

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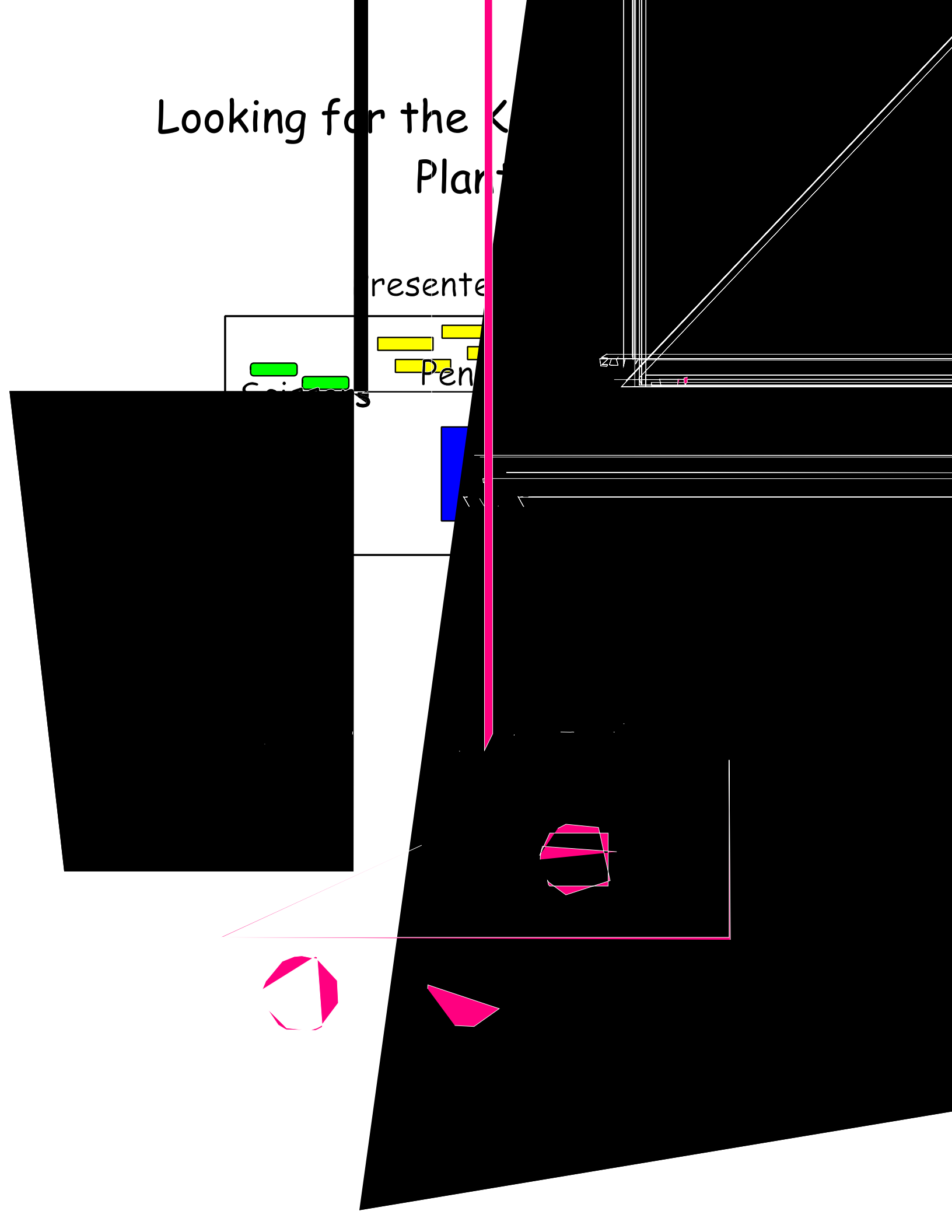
All the pictures for the wetlands plants were taken from the following internet web sites:

Jewelweed: http://www.wildcrafting.com/photos2.htm
Iris (Blue Flag): http://www.cffcm.org/gallery/gallery-flowers.htm
Hibiscus: http://www.windycityart.com/wallpaper
Eastern Skunk Cabbage: htttp://www.swsbm.com/images/New4-9-97/symplocarpus_foetida.jpg
Wild Rice: http://aquat1.ifas.ufl.edu/zizaqu2.jpg
Common Reed: http://aquat1.ifas.ufl.edu/phraus2.jpg
Soft Rush: http://aquat1.ifas.ufl.edu/juneff2.jpg
Duck Potato: http://aquat1.ifas.ufl.edu/saglan2.jpg
Tearthumb: http://www.nearctica.com/flowers/otos/polygon/polygon2/Psagitt
Bulrush: http://www.botit.botany.wisc.edu/images/veg/Wetlands_I_Plants/Bulrush_Scirpus_acutus_VK.html
Cattails: http://aquat1.ifas.ufl.edu/typha2.jpg

Note: The University of Florida, Center for Aquatic and Invasive Plants has many drawings as well as photos of the plants listed above.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Area Requirement

- An unadorned wall to display the Plains Cottonwood Tree Banner
- 8' table for presenter supplies
- Tables for work stations - 3 students per table

PRE-PREPARATION
(approximately 3 hours)

- Check supplies against supply list
- Photo copy Characteristic List, What type of Plant is it and Key To Emergent Plants worksheets
- Review important information
- PRACTICE ACTIVITY
- Cut out leaves

PREPARATION
(approximately 45 minutes)

- Set up Plains Cottonwood Tree banner using 3M wall hangers, binder clips and loose-leaf metal rings
- Place markers, pencils, and tape in the supplies holders and set on tables
- Lay out cutouts of leaves to handout
- Set up supply table with: extra tape, scissors, characteristic lists, leaf cutoffs, all three worksheets and other supplies

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Procedure

THIS IS A 20-25 MINUTE PRESENTATION

(Procedure note cards for this presentation are included)

Intended Student Outcomes

By completing this activity students should be able to:

- Use classification skills in describing their classmates
- Use a dichotomous key to classify wetland plants
- Understand how classification systems are used in science

Procedures

1. Begin by showing the students pictures of different types of plants or show actual plants. Ask them to describe some of each plant's features? What does it look like? What shape is it? How tall is it? What color is it? Does it have flowers? Where might it grow? Have students describe each plant in as much detail as possible and explain each plant.

2. Explain to the students they will be learning how to classify wetland plants. But first they are going to be classifying each other. Give each student a construction paper cutout of their leaf and a characteristic list.

3. Have each student pick a partner.

4. Ask students to write the name of their partner on their leaf and fill out the characteristic list based on their partner's features. During this time they should also place a piece of double sided tape on the back of the leaf. Markers, pencils, and tape will be in the supplies holder.

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5. Once everyone has finished the list and leaf cutout, have them gather around the Plains Cottonwood Tree. Explain to the class that they are going to follow the classification tree using their classification list to the smallest branch and attach their leaf on the end. When the activity is complete, all students in the class will have been "keyed out" and the tree will be full of leaves.

6. Explain that the way they classified each other is similar to how scientists classify plants.

7. Hand out the "What type of plant is it?" worksheet. This worksheet has the students work through a dichotomous key using the pictures of plants. Work as a class to complete the worksheet by answering the questions together.

8. If there is time remaining the students can work on the "Key to Emergent Plants" part of the worksheet. This is a more difficult worksheet and some students may need assistance in finishing. If there is no time remaining the students can take it with them to complete.

9. Ask the students to summarize what they have learned about classifying wetland plants. Make sure students understand the connection between them classifying each other by physical features and how plants are also classified by physical features.

10. Once students have left, remove leaves from the tree. Place leaves in garbage bag for throw away. This is to prepare for the next class.

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Final Clean Up

Approximately 45 minutes

- Remove all leaves from the tree and throw away
- Place all markers and pencils in a small Rubbermaid container
- Place all remaining unused leaves in a small Rubbermaid container
- Take down the tree, roll it up and place in a storage box
- Remove all hooks and rings from the wall and place in the same Rubbermaid container as the markers and pencils
- Return all materials to the large Rubbermaid container