

Exotic Plant Fair *Teacher's Guide*

Students research exotic plants and create displays to persuade others their plant is the worst of all.

GRADE LEVEL: Intermediate Grades

SUBJECT AREA/COURSE: Language Arts and Science

SUNSHINE STATE STANDARDS:

- The student recognizes when a text is primarily intended to persuade. (LA.A.2.2.3)
- The student uses electronic technology, including word-processing software and electronic encyclopedias to create, revise, retrieve, and verify information. (LA.B.2.2.4)
- The student recognizes different techniques used in media messages and their purposes. (LA.D.2.2.3)
- The student understands that a variety of messages can be conveyed through mass media. (LA.D.2.2.5)
- The student knows how all animals depend on plants. (SC.F.1.2.2)
- The student knows that data are collected and interpreted in order to explain an event or concept. (SC.H.3.2.2)
- The student knows ways that plants, animals, and protists interact. (SC.G.1.2.1)
- The student knows that living things compete in a climatic region with other living things and that structural adaptations make them fit for an environment. (SC.G.1.2.2)
- The student knows that all living things must compete for Earth's limited resources; organisms best adapted to compete for the available resources will be successful and pass their adaptations (traits) to their offspring. (SC.G.2.2.1)
- The student understands that changes in the habitat of an organism may be beneficial or harmful. (SC.G.2.2.3)

ACADEMIC OUTCOMES/LESSON OBJECTIVES:

- Students will investigate exotic plants in a science fair setting.
- Students will gain an understanding of the problems created by exotic plants.
- Students will be exposed to the effect that mass media messages can have on a large number of people.

BACKGROUND INFORMATION: Exotic plants are plants that have been brought to Florida by people. Some may have arrived with the first European explorers (water lettuce) and more arrive yearly. Exotic plants become invasive when the insects and other animals that eat them are not here, and they flourish. The plant may have toxins or other factors that are tolerated by species that eat them and keep them in check back home, but no Florida species are adapted to eat them. Plants are always competing for space, minerals, water, and sun. The invasives have an unfair advantage!

Invasive plants may produce a toxin that keeps other plants from growing around them, creating monocultures, like the melaleuca in south Florida. The plants that should be there for a Florida habitat aren't there and the animals have no food. They die, move away, or don't raise any young.

There may be fungi or bacteria that keep the plant in check in its home range that are missing here.

Invasive aquatic species can cover the surface of the water and shade out the eelgrass that is food and shelter (substrate) for both fish and macroinvertebrates, or they can form dense growths that even fish can't get through. Fish can't find a place to lay eggs, and food supply is diminished. Waterways may become clogged so that boats can't get through.

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Many invasive plants were first introduced as landscape plants or grown for aquariums and released into streams and lakes. Invasive plants are often spread from place to place as hitchhikers on boat trailers.

In preparation for this activity, preview the exotic plants. Go to www.hillsborough.wateratlas.org > The Atlas > Lake Name > (Select a lake. Lake Thonotosassa is a good one to try.) > Ecology tab > List of Plant Species. At the top are the reports by date. Some lakes have only one report; some have none. Two sources of information are cited under "Links for More Information." Click on them to reach the home page of each website. At the University of Florida's IFAS Center for Aquatic and Invasive Plants home page, scroll down to the notice for four large murals FREE TO TEACHERS! Send off for these large murals! (<http://aquat1.ifas.ufl.edu/welcome.html>)

MATERIALS NEEDED: Computer with Internet access and www.hillsborough.wateratlas.org bookmarked, printer, paper, display board, markers, a variety of plant guides, real specimens if possible, tables, exit survey document. See above for the large plant murals from UF.

SAFETY: Caution: students should wash hands after handling plants and not put plants in their mouths. Students should be cautioned not to release specimens of invasive or exotic species into waterways when finished.

VOCABULARY: aquatic, invasive, exotic, native, species, monoculture, mass media

KEY: Presentations will vary.

PROCEDURE:

1. Assign or have students choose collaborative groups of 2 or 3.
2. Discuss native and non-native plants and animals. Use as an example a plant that is invasive that students may have seen, such as the air potato.
3. Direct students to choose a few lakes listed from the website. They will look for plant species that seem to be common in most of the lakes they are researching. Compile a list of many invasive plants and put this list on a large class chart.
4. Each group will choose one plant from the class list, with each having a different plant. The students will gather research on their plant using the Watershed Atlas, (Links from the Ecology Tab > Plant List), Google Web and Image features, and other research material gathered by the teacher or students. Students must give proper credit for information and/or photos used.
5. Students will create presentations that will appeal to a range of ages from first grade to adults designed to persuade the viewer that theirs is the very worst invasive plant. Student groups will prepare Science Display boards that should be visually attractive. Include pictures, live or pressed specimen if possible, clear and easy-to-read wording, information and some type of graphic information.

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6. The students will prepare computer-generated brochures or handouts to have available at the fair. If practical, they may prepare Power Point presentations.
7. Students will present their plant in an Exotic Plant Fair and invite other classes throughout the school. Students will prepare visual media such as School TV announcements, posters placed around the school and handouts announcing the fair.
8. On the day of fair, student pairs will set up their display and be at the table to talk about the dangers of their plant and answer questions.
9. Upon exiting the fair, each visitor will vote for the three plants that they feel create the most problems. Since the majority of the participants will have little or no previous knowledge of exotic plants, their decisions will be based mainly on the student projects. This will help the intermediate students to see the importance of media appeal.
10. Students will poll the participants as they leave to see why they voted as they did. The fifth graders can place the results on a bar graph and analyze the graph. A sample poll is found on the next page; however, the class should write their own exit poll.
11. After the fair, the students will tally the votes and then discuss why they think the three winning plants were chosen. Did specific age groups or gender groups make similar decisions? They can analyze the data and see if the features they used in creating the board did make a difference.
12. Finally, the students will tabulate the number of people that they educated over a short period of time. This will give them an idea of why mass appeal is important in getting a message across. They also need to discuss whether or not they feel the fair made a difference. Will just having a little bit more knowledge cause the participants to do anything about the problem?

ASSESSMENT OF STUDENTS: The presentations and discussions that follow can serve as an assessment. Teachers should use rubistar.4teachers.org/ to create a rubric for the project assessment.

AUTHOR: Mary Jane Meherg, Goldsboro Elementary – Modified from the original lesson plans created for the Seminole County Watershed Atlas.

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