MARIE SELBY BOTANICAL GARDENS

Native Florida Plants Curriculum

Grades 6-12

Photo: Tracy Calla

Sixth-Twelfth Grades:

Identification and Survey of Native Florida Plants

Curricular units designed & prepared by Sara Kuhar, 2014

MARIE SELBY BOTANICAL GARDENS

Native Plant Species *(Science Pre-Visit Activity)*

Objectives:

- Students will compare and contrast native and non-native (or invasive) plants.
- Students will sort pictures into two groups, native plants and invasive plants, based on their observations of plants in their community.
- Students will discuss the importance of native plants to other species.

Standards:

SC.7.L.17.1 - Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

SC.7.L.17.2 - Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.

SC.7.L.17.3 - Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

SC.912.L.17.16 - Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.

SC.912.L.17.18 - Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

Lesson Description: *(see attached plant sort document)*

1. Before doing this activity, students should be introduced to the terms "native" and "invasive".
    a. Ask students what the words mean in everyday life (native, invade, invasion, invasive).
    b. Ask students what they think it means if a plant is "native" to Florida. Ask what they think it means if a plant is "invasive."
    c. At this point, don't discuss specific examples of plants until after the activity.
2. Hand each team of students a set of plant sort cards.
3. Have one student display all of the plant sort cards so that all team members can see.
4. Students should work together to physically sort the cards into 2 groups: native and invasive
5. Walk around to make sure they are working together, but don't give answers. It is important to make sure one student does not monopolize the activity.
6. When all students are finished, go over the answers.
7. Ask students if they have ever seen any of the plants shown in the pictures, and if so, where.
8. Discuss the importance of preserving native plants:
    a. Why are plants important in a food web?
    b. Who depends on native plants?
    c. What can happen to other populations if native plants disappear?
    d. What can we do to preserve native plants?

Materials:

- 1 set of the plant sort cards (cut into individual squares) per team or pair of students
- Plastic bags to hold each set of cards
- Answer key

Extensions:

- Create a picture or name sort to compare and contrast native and non-native Florida birds.
- Explore the school yard for any noticeable native or invasive plants from the picture sort.
- Create a food chain and/or food web using one of the native plants as the base to show the interdependence of living things in an ecosystem.

Sources:

- Invasive Plant pictures for sort: http://www.plantatlas.usf.edu/flip/browse.aspx?by=common
- Native plant pictures for sort: http://floridayards.org/fyplants/plantquery.php
- Information about Florida's invasive species: http://www.floridainvasives.org/toolbox/floridainvaders.pdf

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Calculating Sampling Areas *(Math Pre-Visit Activity)*

Objectives:

- Students will choose the correct formula for calculating area and use it appropriately.
- Students will calculate the area of circles, triangles, rectangles, and squares.
- Students will the percent proportion to calculate the sampling area within a larger area.

Standards:

MAFS.7.RP.1.1- Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
MAFS.7.RP.1.2 - Recognize and represent proportional relationships between quantities.
MAFS.7.RP.1.3 - Use proportional relationships to solve multistep ratio and percent problems.
MAFS.6.G.1.1 - Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes.

Lesson Description: ***(see attached Area Practice Worksheet)***

1. Before doing this activity, discuss with students the different formulas used to calculate area for different shapes.
2. Discuss the importance of including units.
3. Hand out practice worksheets to students.
4. Students may work in pairs to complete the practice worksheet.
5. Encourage students to show all steps.
6. Afterwards, review answers with class and check for accuracy.
7. Discuss with students how the larger shape represents the entire study site, while the smaller shape represents the sampling area. At Selby Gardens and in the school yard, students will use these same techniques to complete the Native Plant Species survey.

Materials:

- Area Practice worksheet (1 copy per pair of students)
- 4-function calculator (1 per pair)
- Answer key

Extensions:

- For higher level students, students could calculate the area of irregular polygons.

MARIE SELBY BOTANICAL GARDENS

Native Plant Species Survey *(Math & Science: During Visit & Post-Visit Activity)*

Objectives:

- Students will use dichotomous keys and field guides to identify native plants at Marie Selby Botanical Gardens and in the school yard.
- Students will estimate the land cover percentage of native plants in a given sample location at Marie Selby Botanical Gardens and in the school yard.
- Students will use prior knowledge to calculate the area of the sampling space.
- Students will use the percent proportion to calculate the population density of plant species in a self-constructed area.

Standards:

SC.7.L.17.1 **-** Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

SC.7.L.17.2 - Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.

SC.7.L.17.3 - Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

SC.6.L.15.1 **-** Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

SC.912.L.17.16 - Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.

SC.912.L.17.18 - Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

Lesson Description: ***(see attached Study Site Data Table)***

<u>During visit to Selby Gardens:</u>

1. Students should make a prediction about whether they think they will find more native plants at Selby Gardens or at their school yard.
2. With the help of teachers and Selby guides, students will start by estimating the total area of the study site by measuring and recording the length and width on the back of the provided study site data table handout, and then calculating the total area.
3. Students should mark the actual sampling locations that they are each responsible for on their study site map.
4. Students will use dichotomous keys and field guides (provided by Selby Gardens) to identify the native plants found in the specified area.
5. Students should record the following information on their Study Site table handout: the type of native plant (common name), the scientific name, the area taken up by the native plant (after first measuring the length and width), the percentage of the total study site area taken up by each native plant section.

<u>Post visit activity:</u>

6. Similar to activity at Selby Gardens, students will use the same methods to determine the types of native plants within their school yard, as well as the total area taken up native plants. Use survey flags or other objects to mark off the study site location. *(It would be helpful to predetermine the study site location at the school yard and mark it with flags or other objects before bringing students out.)*
7. Students will either have to create a study site map, or a basic outline can be provided by the teacher. The same data table from Selby handout can be used.
8. Using "Create-A-Graph" or on graph paper, students will graph the native plant land cover percentage at Selby Gardens vs. the school yard as a double line graph.
    a. X-axis should be the types of native plants
    b. Y-axis should be the area taken up by the native plants in m^2

MAFS.6.RP.1.1 - Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. ***MAFS.6.RP.1.2*** - Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. ***MAFS.6.RP.1.3*** - Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. ***MAFS.6.G.1.1*** - Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes. ****MAFS.7.RP.1.1***- Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. ****MAFS.7.RP.1.2*** - Recognize and represent proportional relationships between quantities. ****MAFS.7.RP.1.3*** - Use proportional relationships to solve multistep ratio and percent problems. ***MAFS.912.F-IF.2.4*** - For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. ***MAFS.912.F-IF.2.5*** - Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. • ***LAFS.6.SL.1.2, LAFS.6.SL.1.3, LAFS.6.SL.2.4, LAFS.7.SL.1.2, LAFS.7.SL.1.3, LAFS.7.SL.2.4, LAFS.8.SL.1.2, LAFS.8.SL.1.3, LAFS.8.SL.2.4*** • ***LAFS.68.RST.1.3, LAFS.68.RST.2.4, LAFS.68.RST.3.9, LAFS.68.WHST.3.9*** • ***LAFS.910.RST.1.3, LAFS. 910.RST.2.4, LAFS. 910.RST.3.9, LAFS. 910.WHST.3.9, LAFS.1112.RST.1.3, LAFS. 1112.RST.2.4, LAFS. 1112.RST.3.9, LAFS. 1112.WHST.3.9***	9. Based on the graphed data, students should draw conclusions about the abundance and diversity of native plants at Selby Gardens vs. the school yard. a. Were there more or less native plant types at the school yard? b. Did you observe more animals at Selby or at the school yard (insects, birds, squirrels, etc.)? c. Did you observe any of the common invasive plants in the school yard that could be affecting the native plants?

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Materials:

- Dichotomous keys (provided by Selby Gardens)
- Plant field guides (provided by Selby Gardens)
- Study Site Data Table Handout (1 per group of students)
- *Clipboards (optional)*
- 4-function calculator (1 per group)
- Tape measure or Distance Measuring Wheel
- Survey flags or other objects to mark sampling boundaries

Extensions:

- Go further into common invasive plants in Florida and have students create "Wanted" posters to educate their peers and families about the dangers of planting invasive plants (http://www.glassgiant.com/wanted/). They could include: a picture, identifying characteristics, "crimes", and what to do if you find it.
- Students could break into groups and create a cheat sheet for the "do's and don'ts" of Florida landscaping to share with their school or families (http://www.floridayards.org/landscape/tutorial.php).
- Have students go through the "Florida-friendly Interactive Yard" website to gain a better sense of common native plants and how they should be planted (http://www.floridayards.org/interactive/index.php).
- As a STEM activity, students could create a plan for their school to increase native plant abundance. This may include removal of invasive plants, adding native plants, and adding other wildlife-attracting features (may use Florida-friendly landscaping certification checklist as a guide).

Sources:

- Florida-friendly Interactive Yard: http://www.floridayards.org/interactive/index.php
- How to do Florida-friendly landscaping: http://www.floridayards.org/landscape/tutorial.php
- Florida-friendly Landscaping Certification Checklist: http://fyn.ifas.ufl.edu/materials/FYN_Yard_Recognition_Checklist.pdf
- Mobile plant atlas for invasive plant species: http://www.plantatlas.usf.edu/flip/
- FL Exotic Pest Plant Council: http://www.fleppc.org/
- Pictures of native plants: http://floridayards.org/fyplants/plantquery.php?gotoPage=2&category=tree&changepgnum=y
- Invasive species plant info cards: http://plants.ifas.ufl.edu/education/flash-cards-central-region
- How to dispose of invasive plants: http://www.fleppc.org/Publications/Florida_InvasivePlDisposalGuidelines.pdf
- "Wanted" Posters: http://www.glassgiant.com/wanted/
- Create-A-Graph: http://nces.ed.gov/nceskids/createagraph/default.aspx

MARIE SELBY BOTANICAL GARDENS

Native Plants & Florida Bird Populations *(During Visit & Post Visit Activity)*

Objectives:

- Students will use dichotomous keys and field guides to identify native plants at Marie Selby Botanical Gardens and in the school yard.
- Students will estimate the land cover percentage of native plants in a given sample location at Marie Selby Botanical Gardens and in the school yard.
- Students will conduct point counts to estimate bird population diversity and abundance at Marie Selby Botanical Gardens and the school yard.
- Students will compare the land cover percentages of native plants and bird populations found at Marie Selby Botanical Gardens and the school yard.
- Students will use prior knowledge to calculate the area of the sampling space.
- Students will use the percent proportion to calculate the population density of plant species in a self-constructed area.

Standards:

SC.7.N.1.1 **-** Define a problem from the seventh grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.6.L.15.1 **-** Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

Lesson Description: ***(see attached point count method info)***

<u>During visit to Selby Gardens:</u>

1. In conjunction with the Native Plant Species Survey activity, students will conduct a point count to estimate bird abundance and diversity at Selby Gardens and at the school yard.
2. Students will determine the parameters for a 20 meter radius sampling location. *(To save time, this could be predetermined by the teacher.)*
3. Students will conduct a point count of the bird population abundance and diversity in the sampling area (approximately 10 minutes).

<u>Post visit activity:</u>

4. Students will conduct the Native Plant Species Survey activity at the school yard before doing the bird point count.
5. Students will construct the parameters of a 20 meter radius sampling location within the school yard.
6. Students will conduct a point count of the bird population abundance and diversity in the sampling area (approximately 10 minutes).
7. Using “Create-A-Graph” or on graph paper, students will graph the bird population abundance and diversity at Selby Gardens vs. the school yard as a double line graph.
    a. X-axis would be the types of birds found at Selby Gardens and the school yard (Try to identify all types of birds, but if some are unknown, include them as “Unknown bird 1”, etc.)
    b. Y-axis would be the total number of birds observed for each type of bird.
8. Based on the graphed data, students should draw conclusions about the relationship between native plants and bird populations (if apparent), by comparing their different line graphs. Possible discussion points include:
    a. How much of the school yard is made up of Florida native plants?

SC.7.L.17.1 - Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.
SC.7.L.17.2 - Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.
SC.7.L.17.3 - Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.
SC.8.N.18.2 - Design and conduct a study using repeated trials and replication.
SC.8.N.1.6 - Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence.
SC.912.L.17.1 - Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.
SC.912.L.17.15 - Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.
SC.912.L.17.16 - Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.
SC.912.L.17.18 - Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.
MAFS.6.RP.1.1 - Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
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MAFS.6.RP.1.3 - Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

   b. How many and what types of birds are around the school yard?
   c. Is there a relationship between native plant population density and urban bird populations?
   d. Did you observe more birds (abundance) at Selby Gardens or at the school yard? What could be a reason for this?
   e. Did you observe more diversity in the types of birds at Selby Gardens or at the school yard? What could be a reason for this?
   f. Are there differences between the two locations: urban vs. suburban areas, coastal vs. inland locations, more native plants vs. less native plants?
9. As a long term study, this point count method should be conducted at least once a month over the course of the school year so that students can observe changes in the bird population during different seasons.
10. Students should then graph the abundance and/or diversity of bird populations for each month using a line graph and draw conclusions about the factors influencing bird populations in the area.

Extensions:

- Students could participate in a Citizen Science Program (either UF or Cornell – see sources below), which would allow them to collect meaningful, real-world data for scientists. They could also view previous data or data from other locations to use for comparison.
- Students could conduct a survey of bird populations at their homes to compare to the school yard, as well as assessing how many native plants they have in their yard (or how "Florida-friendly" their yard is).
- As a STEM activity, students could create a plan for their school to increase native plant abundance and bird population abundance and diversity. This may include removal of invasive plants, adding native plants, and adding other wildlife-attracting features (may use Florida-friendly landscaping certification checklist as a guide).

MAFS.6.G.1.1 - Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes. ***MAFS.7.RP.1.1 -*** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. ***MAFS.7.RP.1.2*** - Recognize and represent proportional relationships between quantities. ***MAFS.7.RP.1.3*** - Use proportional relationships to solve multistep ratio and percent problems. ***MAFS.912.F-IF.2.4*** - For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. ***MAFS.912.F-IF.2.5*** - Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. · ***LAFS.6.SL.1.2, LAFS.6.SL.1.3, LAFS.6.SL.2.4, LAFS.7.SL.1.2, LAFS.7.SL.1.3, LAFS.7.SL.2.4, LAFS.8.SL.1.2, LAFS.8.SL.1.3, LAFS.8.SL.2.4*** · ***LAFS.68.RST.1.3, LAFS.68.RST.2.4, LAFS.68.RST.3.9, LAFS.68.WHST.3.9*** ▪ ***LAFS.910.RST.1.3, LAFS. 910.RST.2.4, LAFS. 910.RST.3.9, LAFS. 910.WHST.3.9, LAFS.1112.RST.1.3, LAFS. 1112.RST.2.4, LAFS. 1112.RST.3.9, LAFS. 1112.WHST.3.9***	

Materials:

- Dichotomous keys (if available)
- Native plant field guides
- Study Site Data Table Handout (1 per group of students)
- Tape measure or Distance Measuring Wheel
- Survey flags or other objects to mark sampling boundaries
- Florida bird field guide *(See attached list of sources)*
- 4-function calculator (1 per group)
- *Clipboards (optional)*

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Sources:

- Florida bird field guides:
  - **Web Resources:**
    Florida Museum of Natural History: http://www.flmnh.ufl.edu/natsci/ornithology/sephotos/birdpint.htm
    USGS Patuxent Bird Identification: http://www.mbr-pwrc.usgs.gov/id/framlst/framlst.html
    CD-ROM package and bird-call cassette tapes can be ordered from: http://www.thayerbirding.com
  - **Print Resources:**
    Peterson First Guides, Birds (ISBN: 0-395-40684-6)
    Peterson Field Guides, Eastern Birds (ISBN: 0-395-36164-8)
    The Birder's Handbook: A Field Guide to the Natural History of North American Birds by Ehrlich, Dobkin and Wheye (ISBN: 0-671-65989-8)
- Point Count Field Method Detailed Explanation: http://edis.ifas.ufl.edu/uw140
- Description of bird count projects: http://edis.ifas.ufl.edu/uw165
- Yard map app that imports satellite imagery and allows for citizen science associated with birds and their habitats: http://content.yardmap.org/
- Florida-friendly Landscaping Certification Checklist: http://fyn.ifas.ufl.edu/materials/FYN_Yard_Recognition_Checklist.pdf
- University of Florida's Citizen Science Bird Program: http://wec.ifas.ufl.edu/birds/
- The Cornell Lab of Ornithology's Citizen Science Program: http://www.birds.cornell.edu/page.aspx?pid=1664

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Native Plant Sort Activity

1. 

2. 

3. 

4. 

DOWNTOWN SARASOTA
1534 Mound Street, Sarasota, Florida 34236
TEL 941.366.5731

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HISTORIC SPANISH POINT
337 N. Tamiami Trail, Osprey, Florida 34229
TEL 941.966.5214

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5. 

6. 

7. 

8. 

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9. 

10. 

11. 

12. 

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Answer Key:

1. Mexican petunia (*Ruellia simplex*) – **Invasive**
2. Lantana; shrub verbena (*Lantana camara*) – **Invasive**
3. Milkweed; Butterfly weed (*Asclepias spp.*) – **Native**
4. Wedelia; creeping oxeye (*Sphagneticola trilobata*) – **Invasive**
5. Canna lily (*Cannas pp.*) – **Native**
6. Beach sunflower (*Helianthus debilis*) – **Native**
7. Air potato; potato yam (Dioscorea bulbifera) – **Invasive**
8. Seagrape (*Coccoloba uvifera*) – **Native**
9. Scrub Palmetto (*Sabal etonia*) – **Native**
10. Camphor tree (*Cinnamomum camphora*) – **Invasive**
11. Tuberous sword fern, Boston fern (*Nephrolepis cordifolia*) – **Invasive**
12. Weeping Lantana (*Lantana depressa*) – **Native**

Picture Sources:

1. Roger Hammer, Wildflowers of the Everglades (http://www.plantatlas.usf.edu/flip/browse.aspx?by=common)
2. Glenn Fleming, USF Herbarium Slide Collection (http://www.plantatlas.usf.edu/flip/browse.aspx?by=common)
3. Russell Sparkman, Fusionspark Media Inc. (http://floridayards.org/fyplants/plantquery.php)
4. Bob Bierman (http://www.plantatlas.usf.edu/flip/browse.aspx?by=common)
5. Shirley Denton (http://floridayards.org/fyplants/plantquery.php)
6. Shirley Denton (http://floridayards.org/fyplants/plantquery.php)
7. Glenn Fleming, USF Herbarium Slide Collection (http://www.plantatlas.usf.edu/flip/browse.aspx?by=common)
8. Shirley Denton (http://floridayards.org/fyplants/plantquery.php)
9. Shirley Denton (http://floridayards.org/fyplants/plantquery.php)
10. Shirley Denton (http://www.plantatlas.usf.edu/flip/browse.aspx?by=common)
11. Shirley Denton (http://www.plantatlas.usf.edu/flip/browse.aspx?by=common)
12. USBG.gov (http://floridayards.org/fyplants/plantquery.php)

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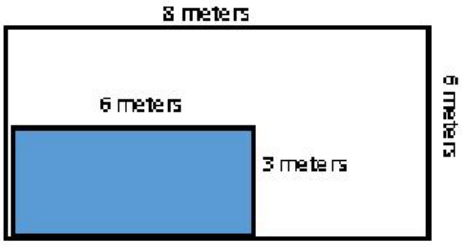
Name _____
Date _____

Find the answers to the following problems. Use the correct formula to find the area of each shape. Don't forget to include appropriate units in your answers



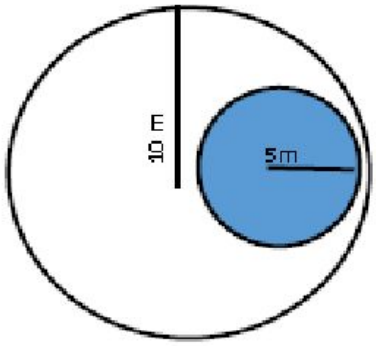
1.

Find the area of the larger shape _____

Find the area of the smaller shape _____

What percent of the larger shape is shaded? _____

2.

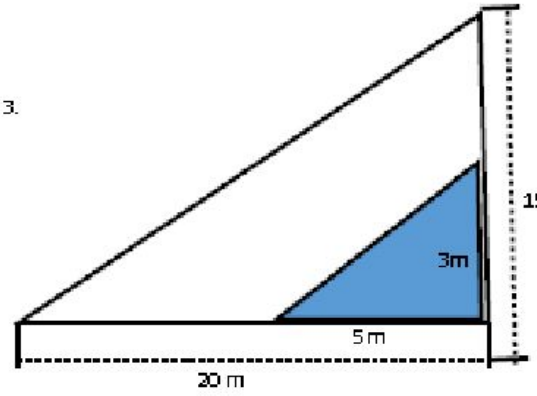


Find the area of the larger shape _____

Find the area of the smaller shape _____

What percent of the larger shape is shaded? _____

3.

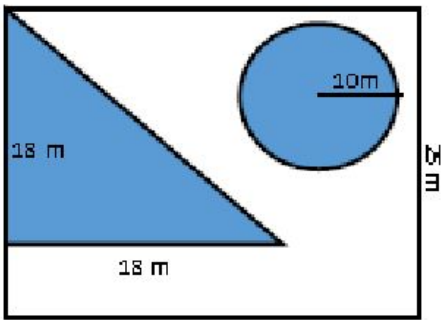


Find the area of the larger shape _____

Find the area of the smaller shape _____

What percent of the larger shape is shaded? _____

4.



Find the area of the larger shape _____

Find the area of the triangle _____

Find the area of the circle _____

What is the total percent of shaded area inside the Rectangle? _____

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Calculating land cover percentage of native plants in a given study site

Plant Type (Common Name)	Scientific Name	Length of Area (m)	Width of Area (m)	Plant Area (m^2)	% of Total Area

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Estimating Bird Population Abundance and/or Diversity:

Summary of point count field method *(adapted from http://edis.ifas.ufl.edu/uw140)*:

1. Locate an area within the school yard that can accommodate a circle with a 20 meter radius without obstructions.
2. Mark location with flags or some other object so that the counts will always take place in the same exact location.
3. Conduct the counts 1-3 times per month, within 3 hours after sunrise. They should last 10 minutes.
4. During the point count, record all birds seen and heard with the survey area.
5. Try to identify all birds seen during count.
6. Stay silent during the count. Wait 2 minutes before starting the count, but do record all birds that left the survey area upon arrival.
7. Categories:
    - FT (fly-thrus): All birds that fly from outside of the survey area through the survey area (below the tallest structure), but do not land.
    - FO (fly-overs): All higher-flying birds (above the tallest structure) that are within the survey area should be counted.
8. When estimating abundance (more than 1 of the same species), make sure the birds are separate individual birds.
9. Record general climatic conditions, focusing on wind intensity (no wind, slight, gusty, strong wind), temperature, and cloud cover percentage. Avoid counts on days when the wind is too strong.
10. **To participate in the Florida Monitoring Program**: You will need to get a *User ID* and a *Point Count Code* for your point count. Before starting the point count, please contact Dr. Mark Hostetler at 352-846-0568 or hostetlerm@wec.ufl.edu and indicate whether you are connected with an Extension program, a school, a private or public organization, or just on your own. Also, please include your phone number and Email address. After contacting us, we will send you a User ID and Code.
11. **More detailed information and sample data sheets can be found at http://edis.ifas.ufl.edu/uw140.**