



VIRTUALLY WILD! COMMUNITIES

ACTIVITY
GUIDE FOR URBAN
WILDSPACES



So you watched a *Virtually Wild! Communities* video with your class. Now what? There's a lot to unpack but worry not. We have a few activities to get you started.

Themes from Virtually Wild! Communities @ T. C. Jester Park:

- Urban Heat Island Effect
- Watersheds
- Galveston Bay Area Ecosystem
- Wildlife Ecology
- Leave No Trace
- Tree Identification
- The Need for Urban Greenspaces
- Riparian Buffers
- Trees in Wetland Areas

Resources:

- [City of Houston Parks and Recreation Department Natural Resources Website](#)
- [HERE in Houston Website](#)
 - Check out our page on [Air Quality](#) in the Greater Houston Area
- [Houston Harris Heat Action Team](#)
 - Check out this [YouTube video](#) about the heat mapping project!
- [Trees of Texas](#) website by the Texas A&M Forest Service
- [iNaturalist](#)

Activity Guide for Virtually Wild! Communities

Native Trees with Virtually Wild! Communities

Activity # 1 Tree Diversity

Time Required: 60 minutes

Lesson Developers:

Emma Wilson & Alicia Mein-Johnson of
Citizens Environmental Coalition

Materials:

- Field guides to trees or access to a [tree ID website](#)
- paper/nature journal with crayons/colored pencils
- graph paper

Objectives:

- ❖ Students will identify trees using defining characteristics.
- ❖ Students will journal and analyze their own data.
- ❖ Students will create a dichotomous key or select the “best” native tree.

Grade Level - Science (Math TEKS vary)

K-2st– 1-4, 8, 10

3 - 5th – 1-4, 7, 9, 10

6th - 1-4, 12

7th - 1-4, 10B, 11B, 14B

8th - 1-4, 11

Procedures

Activities

I. Motivation/Warm Up

-Use field guides or the [Trees of Texas](#) website to determine your local ecosystem and to identify 5-10 native trees. Go for a nature walk, and collect twigs & leaves with identifying factors of a few native species. Or have students bring a leaf to class, and share in class.

II. Information

-Brainstorm a list of defining characteristics of trees (ex: leaf shape and arrangement, leaf scars/buds, bark, etc.).
-Using the twigs, teach the kids to ID several tree species using a field guide or tree ID website.
-Introduce these topics, where relevant: biodiversity, taxonomic classification, and interrelationships between different species.

III. Practice

-Students go for a nature walk. Collect data on the number of trees seen and number of different species, and practice making charts and graphs with the data in their nature journals.
-Older students find [biodiversity indexes](#) like Species Richness, Simpson’s Index, Shannon-Wiener Index, etc.
-Students could press or draw specimens of the trees, or make leaf rubbings as age appropriate, to add to their nature journal.

IV. Application

-Extension A. Students break into groups and research a native tree to present to the class, including identifying factors, range, and uses in history and today. Students debate and decide which native tree they should plant on their campus (call up Trees for Houston to get one donated).
-Extension B. Students use the tree characteristics to make a dichotomous key for identification. Compare their keys with [Trees of Texas website](#).

V. Extension

Invite a guest speaker from Texas Forest Service to speak in class.

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Activity # 2 Urban Heat, Trees Got You Beat.

Time Required: 2 class periods

Lesson Developers:

Emma Wilson & Alicia Mein-Johnson,
Citizens' Environmental Coalition

Materials:

-Thermometer
-Access to a variety of sunny and shady outdoor spaces.
-Paper or GPS map of the area

Objectives:

- ❖ Students use a thermometer in a sunny and shaded location to explore the Urban Heat Island Effect.
- ❖ Students map the data & create solutions to the Heat Island effect
- ❖ Students prepare a letter to advocate for their solutions.

Grade Level - Science & Social Studies TEKS

3rd - 1, 4, 7, 9 and 3, 4

4, 5th – 1-4, 7, 9 and 8

6th - 1-4 and 5, 6, 18

7th - 1-4, 8, 13 and 9, 18

8th - 1-4, 11 and 11

Plus various **MATH TEKS** where appropriate to graph, chart, and analyze data.

Procedures

I. Motivation/Warm Up

-Have students make predictions about the temperature in shady vs sunny areas.

II. Information

-Discuss the Urban Heat Island effect and its implication for Houston neighborhoods. Show them the story map documenting the results of the [H3AT mapping](#) project, and discuss potential solutions to the urban heat problem.

-Have students create a map (or look at a printed or electronic map) of the area and find the locations where they want to test the temperature. Encourage them to try a variety of surfaces with vegetation, reflective properties, or different colors, in both the sun and shade.

III. Practice

-Students measure and record the temperature in different sample locations and mark the locations on a map.

-Meet and discuss the data. Where are temperatures higher or lower? What time of day or season did students go out?

IV. Application

- Revisit the importance of native trees.

- Have students create a plan on a home/family, class, or institution level to reduce the level of heat.

-Share their plan with community stakeholders.

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Activity # 3 Urban Diversity

Time Required: 45 mins

Lesson Developers:

Emma Wilson, Alicia Mein-Johnson,
Citizens' Environmental Coalition

Materials:

-field guides or ID website like [iNaturalist](#),
-[List of endangered Species](#) in Texas
-paper for drawing or 3-D modelling supplies (clay,
cardboard and tape, etc.)

Objectives:

- Students research a generalist and an endangered species (specialist) and determine their habitat needs
- Students design the perfect habitat for their specialist
- Students discuss nearby natural areas and improvements humans could make to increase biodiversity

Grade Level - **Science & Social Studies TEKS**

K-1st– 1-4, 9

2nd – 1-4, 9

3rd – 1-4, 9, 10 & 3, 4

4th – 1-4, 9, 10 & 8

5th – 1-4, 9, 10 & 8

6th - 1-4, 12 & 5, 18

7th - 1-4, 10A, 10B, 13 & 9, 19

8th - 1-4, 11 & 11

Procedures

I. Motivation/Warm Up

-Brainstorm the perfect human habitat and things humans have invented to make our lives easier. Contrast this with the natural environment.

II. Information

- For younger students introduce a list of 3-5 common (generalist) and endangered (specialist) species in your local area. Older students pick one species of their choice in each category.
- Investigate the habitat needs of a generalist species like great tailed grackles or grey squirrels and compare that to the needs of the endangered species like an Attwaters Prairie Chicken.
- Note: There are five National Wildlife Refuges near Houston. Visit hereinhouston.org for information about local wildlife.

III. Practice

-Students design and/or build the ultimate habitat for endangered species in the Houston area. Include factors necessary for the animals to eat, shelter and reproduce. Compare their ideas to what is being done at the Houston Zoo.

IV. Application

Students work in groups to combine their ideas to create one habitat that would work for several species. Compare their ideas with real work being done at National Wildlife Refuges. Have students share their ideas with refuge rangers, to see what is really happening in Houston.