

## LESSON 7: GREEN SPACE AND PUBLIC HEALTH

### OVERVIEW:

The purpose of this lesson is to continue exploring characteristics of urban areas that promote public health. Specifically, this lesson focuses on how green space improves neighborhood health by providing space for recreation, which decreases obesity. The lesson begins by having students brainstorm how they typically spend their time during a day off on a snowy day in the winter and a sunny day in the summer. Next, students work in groups either by making calculations using a website or looking at data tables to investigate how living near green space can affect an individual's activities and the number of calories they burn. The students then reflect on their own activities and consider how their choice of activities would change if they lived close to different types of green spaces. Finally, students read and discuss an article from the New York Times which describes the importance and benefits of exercise outdoors.

### SUB-QUESTION:

How does the availability of green space in a city impact individual health?

### WAYS OF KNOWING URBAN ECOLOGY:



Students will...

#### Understand

- Understand that increased green space in cities improves health by providing space for recreation. (*ecosystem change, forces and drivers*)
- Recognize how different activities impact calorie use. (*ecosystem change, forces and drivers*)

#### Talk

- Identify the scientific problems, claims, evidence, and reasoning in an environmental and health science oriented news article.

#### Do

- Analyze their own personal activities in relation to green space availability and indicators of health.

#### Act

*No specific goals connected with acting on urban ecology in this lesson.*

### SAFETY GUIDELINES

No specific safety issues are associated with this lesson.

### PREPARATION:

#### Time:

1 class period

#### Materials:

##### **Activity 7.1**

For each student:

Copies of student sheet

**Activity 7.2**

For each student:

Copies of student sheet

For each student group

Either a computer with internet access or copy of the Activities and Calories student sheet

**Activity 7.3 (Optional):**

Computer with PowerPoint presentation software and projector

**Activity 7.4:**

Copies of the *New York Times* article entitled “Head Out for a Daily Dose of Green Space” can be retrieved at

<http://www.nytimes.com/2010/11/30/health/30brody.html>

**Reflections:**

Student journals (optional)

**INSTRUCTIONAL SEQUENCE****Activity 7.1: Brainstorm Typical Activities**

1. Tell students that today they will be continuing to talk about public health in cities. Today they will be focusing on activities that people physically do in cities.
2. Pass out the student sheet. Have students quickly brainstorm a list of activities that they would typically do in the winter and in the summer. After students have finished writing down their lists, have a couple of students share what they wrote down. You may want to make two lists on the board (one for winter and one for summer) with some examples of typical activities.
3. Tell students that you will revisit this list at the end of class, but first they will take a look at some other high school students and how where they live impacts what they do during a typical day off.

**Activity 7.2: Activities and Green Space**

1. Place students into small groups to work on the activity.
2. Distribute the student sheet for the version of this activity you would like students to complete. There are two versions of this activity. One version has the students use an Internet Calorie Burned Calculator to calculate how many calories were burned (Says Internet Version in Header). The second version includes a completed table with the calories for each activity. In this version the students only need to add up the calories to find a total.
3. Tell students that after they have completed the prediction they should share their predictions and rationales with the other members of the group before going on to calculate the number of calories burned for the three high school students.

4. After students have completed the activity come together as a class to discuss the conclusions. Ask students – What is the relationship between green space and park and individual health? Why do you think this relationship exists?
  - *Individuals who live closer to green space and parks are more likely to be more active and burn more calories. Green space and parks provide a location where people can get together and engage in different types of activities. Even just walking a couple of blocks to a park burns more calories than watching TV.*
5. You may also want to connect this back to the previous lesson on food consumption. You may want to ask students – Which of these three high school students do you think probably ate healthier food and why?
  - *You could predict that Student C ate the least healthy because the student sat in a pizza shop for 2 hours and 20 minutes.*

#### **Teaching Alternative**

- If you are using the Internet version of this activity, you may want to have students calculate the number of calories they would have burned for the various activities they said they would typically do on a winter day and on a summer day in Activity 7.1. This can help them realize the impact of their own personal decisions on their health.

#### **Activity 7.3: Learning about Type 2 Diabetes (Optional)**

1. Use the PowerPoint presentation (M5\_L7\_T2Diabetes.ppt) to present background information about Type 2 Diabetes to your class. The notes in the PowerPoint contain further information, aspects to highlight, and suggested questions to ask your students.

#### **Activity 7.4: Reading the News Items**

1. Tell students that recently research has been done to look at the impact that parks and greens spaces have on the health of children, including the incidence of type 2 diabetes. They are going to read a summary of this research from the *New York Times*.
2. Have students read the *New York Times* article entitled “Head Out for a Daily Dose of Green Space.” You can either have students read this individually or aloud as a class. If reading aloud as a class, write any terms that your students have difficulty with on the board as they are reading. Before moving on, define the terms as a class, first soliciting ideas from the students and then guiding them to an accurate definition and understanding of the terms.
3. Write four columns on the board as depicted below:

Problems	Claims	Evidence	Reasoning

4. Ask your student to name one or more *problems* described by the article. Appropriate responses include “outdoor deprivation disorder,” lack of activity or exercise, a range of health problems (including type 2 diabetes, heart disease, asthma, depression, etc.).
5. Ask your students to name some of the *claims* made in the article for addressing or fixing these problems. Appropriate responses include getting outside, moving around, exercising outside, creating more green spaces for people to go to, making policies that encourage people to go outside (such as “Great Outdoors Month,” a daily “green hour,” etc.)
6. Ask students to name some of the *evidence* provided in the article to support these claims. Appropriate responses include the impact of exercise on health, the impact of outdoor play on health, the increase of “cognitive functioning” by children who moved to greener areas, and that getting outdoors leads to a more consistent exercise regimen.
7. Ask you students to name some of the *reasoning* used to support claims with evidence. Appropriate responses will vary depending on the claims and evidence that your students provide. You may wish to guide your students to consider the *appropriateness* and *sufficiency* of the evidence. Does the evidence appropriately back up the claims? Does the evidence sufficiently back up the claims? Much of the evidence in the article is appropriate and comes from peer-reviewed journals and identified experts, lending to the idea of being sufficient evidence.

### **Teacher Background Knowledge**

The *New York Times* article references a research article published in the journal *Current Problems in Pediatric and Adolescent Health Care* in 2010 entitled “Using Nature and Outdoor Activity to Improve Children's Health.” We have included a copy of the research article to provide you with a deeper understanding of the science and epidemiology involved.

### **Concluding the Lesson**

1. Have students look back at the list of activities that they brainstormed that they would typically do in the winter and summer (either on their own sheets or if there is a list on the board have them look at this). Have students answer the following reflection question either as a class discussion or in their journals – How do you think your personal activities are impacted by the green space or parks near your home? If you lived somewhere else in the city, do you think your activities would be different? Why or why not?
  - *The purpose of this question is to get students to think about the available green space or parks and how it influences their own decisions. You also may want to encourage students to consider possible actions around this topic. Are there areas near their home or school that could be turned into parks? Do they think that would change the actions of the children or adults who live in the neighborhood? Why or why not?*