Urban Sprawl

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Image from : http://envplan240.pbwiki.com/Urban%20
Sprawl

Overview:
Ever since the industrial revolution, the transformation of living in the city to living in the suburbs has been present. The term for this is urban (suburban) sprawl. This is the spreading of a city and its suburb over the non-city land that is located at the outskirts of the suburban city limits. The term urban sprawl is normally used in a negative connotation because of the issues related to the environment and health. The environmental issues are prevalent because the land that was once used for wilderness and wild animals are being used up. Something that ties between environmental issues and the health issues is the pollutions that are emitted from the neighborhoods and the people who live in them.

Urban sprawl does not just exist in suburbs or neighborhoods, but it includes strip malls, shopping malls, and general fast food chains. For the most part people would rather live in a quiet area away from big cities, but that is actually more detrimental to the environment and the health of the earth.

Purpose:
The purpose of this lesson is to help the students understand the impact urban spawl has on everyone's lives, as well as the environment and evertthing around us. The student will also be able to realize the impact their lives has as a suburban resident. Students will also understand the importance urban sprawl has for the growth of the city but be able to realize the effect it has on the environment. By the end of this lesson, the student will be able to weigh the pros and cons of urban sprawl and the impact it has.

Standards:
Arizona Science Standards: 7th grade.
Strand 1; Concept 1; P.O. 1 – Formulate questions based on observations that lead to the development of a hypothesis.
Strand 1; Concept 1; P.O. 2 – Select appropriate resources for background information related to a questions.
Strand 1; Concept 4; P.O. 1 – Choose an appropriate graphic representation for collected data.
Strand 3; Concept 1; P.O. 1 – Analyze environmental risks (e.g. pollution, destruction of habitat) caused by human interaction with biological or geological systems.
Strand 3; Concept 1; P.O. 3 – Propose possible solutions to address the environmental risks in (urban sprawl).
Strand 3; Concept 2 P.O. 1 – Propose viable methods of responding to an identified need or problem.
Strand 3; Concept 2 P.O. 2 – Compare solutions to best address an identified need or problem.
Strand 4; Concept 3; P.O. 3 – Analyze the interactions of living and organisms with their ecosystems: limiting factors, carrying capacity.
Strand 4; Concept 3; P.O. 5 – Predict how environmental factors (e.g., floods, droughts, temperature changes) affect survival rates in living organisms.

Suggested Grade Levels:

4th – 8th

Lesson Times:
1 class periods for the overview of urban sprawl. 1 class period for the execution of the exercise on urban sprawl.

Materials:
Computer (with internet), computer used with SimCity, notebook and writing utensil.

Learning Objectives:
- Students will be able to create questions based on previous knowledge and observations from the exercise.
- Students will be able to use classroom materials, computers, to learn more about urban sprawls.
- Students will be able to determine which graphic representation (bar graph, circle graph, etc.) for data representation.
- Students will be able to evaluate the environmental risk we have in the world because of urban sprawl.
- Students should be able to come up with possible solutions to counteract the risks of urban sprawl.
- Students will be able to look at the interaction humans have with the environment and the world.
- Students will be able to guess how different environmental factors will effect cities compared to urban sprawl.

Suggested Procedure:
During the first day of class, the students will learn what urban sprawl is, characteristics, solutions, critism and the different types of urban sprawls. Some important vocabularies for urban sprawl are:

- Sprawl
- Urban v. rural
- Population density
- Single – use zoning
- Car-dependent communities
- Small Growth

Students will discuss the importance of urban v. rural, the impact population density has compared to single-use zoning and car-dependent communities. Also, we will stress the importance of the environmental risks sociated with urban sprawl.

1. Begin by dividing the students up into groups of 2.

2. Once the students are in the groups, the students will research what urban sprawl is. Students will give some information in front of everyone. They must use some source of graphic organizer, pie or bar chart.

3. Once the students are done presenting, the class will discuss the importance of urban sprawl and the impact it has on the environment.

4. Once the students have sufficiently discusses the topic and are knowledgeable about urban sprawl, the will split up into their groups again and come up with the most important impact (con) that urban sprawl has on the environment.

5. Once written up on the board the students will keep these cons in mind as they play a short game of

SimCity.

6. During the playing of SimCity, the students will have to write down the different types of urban sprawl they see as well as the different impacts urban sprawl has on the environment in the game.

7. Once the game is over, the students will have to share what they have learns.

8. Finally, the students will have to break up into groups of 4, this time, to try and come up with a solution for urban sprawl's impact on the environment.

Assessment:
1. The depth of the research of urban sprawl during their research.
2. Involvement in the discussion of urban sprawl.
3. The involvement in SimCity, as well as, what is learned from playing the game. Students must realize that even though it is a game, there is still environmental destruction in the game.
4. The depth of the solution of urban sprawl's impact on the environment.

Extensions:
1. Using the knowledge gained from the exercise, have the students create an in depth presentation on their knowledge and their solution.
2. Have students come up with different impacts that humans have on the world based on urban sprawl compared to city life.

Sources:
Wikipedia – Urban Sprawl
http://en.wikipedia.org/wiki/Urban_sprawl#Developments_characteristic_of_sprawl

Sprawl City
http://www.sprawlcity.org/

National Geographic – Urban Sprawl
http://ngm.nationalgeographic.com/ngm/data/2001/07/01/html/ft_20010701.3.html

Land Use and Urban Sprawl
http://www.cwac.net/landuse/index.html