

LESSON 9: PLANNING FOR POSITIVE URBAN LAND USE

OVERVIEW:

In this lesson, students will use their knowledge about urban land use that they have learned throughout the module to contribute to the action plan for their field site that focuses on urban land use. Students will also explore the importance of presenting information to diverse audiences. After contributing to their action plans, students will present the changes and updates they made to their plan to the class and the class will discuss the strengths and weaknesses of the different plans.

SUB-QUESTION:

How can we impact land use in our neighborhoods?

WAYS OF KNOWING URBAN ECOLOGY:

		<i>Students will...</i>
	<u>Understand</u>	<ul style="list-style-type: none"> Understand that the effective presentation of information depends on the audience.
	<u>Talk</u>	<ul style="list-style-type: none"> Present a plan to the class designed to improve the field site.
	<u>Do</u>	<ul style="list-style-type: none"> Develop an action plan that uses the knowledge that was gained in the module to suggest improvements for the field site.
	<u>Act</u>	<i>No specific goals connected with acting on urban ecology in this lesson.</i>

SAFETY GUIDELINES:

No safety precautions are needed.

Time:

1 periods

Materials:

Activity 9.1

Student Note Sheets

Activity 9.2

Action Plan Portfolio Sheet (APPS)

Large markers, poster board or large sheets of paper OR access to computers with presentation software (such as PowerPoint)

INSTRUCTIONAL SEQUENCE

Activity 9.1 Planning for Positive Land Use

In this activity, students will develop a plan for their field site. The goal of this plan is to improve the land use of their field site so that it makes the site more sustainable: lowering energy expenditure, decreasing pollution production, increasing ability to impact heat island effect, etc. They should be considering the land use issues that were presented throughout the module.

1. As class begins, remind students that we are continuing our study of urban land use practices. Today we will use what we know about the drivers of urban land use to contribute to their action plan.
2. Remind students of the biophysical and social drivers which have been the focus of discussion throughout the module.
3. Also remind students of the ideas that they have covered in this unit. Namely, the impact of urbanization on the environment and how urbanization can impact the city in which they live. Increased urbanization often means increased impervious land cover which leads to a heat island effect which can adversely impact the quality of life in a city.
 - Also, remind students that the zoning and how the structure of the transportation system is currently set up can lead to significant changes in how land is used. For instance, increased urbanization (and fragmentation of the land) often occurs along major transportation routes. Inform students that they will need to include data which supports these ideas in their action plans.
4. Remind students of the heat island studies they completed, both the scientific data and the social surveys they conducted. Students should consider this information when designing their action plan.
 - For instance, if they observed that the temperature near vegetation was lower than in an empty un-shaded parking lot then students can think about strategies for “greening” the parking lot or reducing the heat island for that area by recommending that shrubs, grasses, trees or other green solutions for reducing the heat island effect (even painting the parking white would be better than a black parking lot).
5. Remind students of the structure of the action plan, and the importance of framing scientific data and concepts for appropriate stakeholders and audiences.
6. Lead a brainstorming session in order to elicit the following information:
 - Ideas for sustaining and improving land use practices.
7. Divide students into small groups of three or four students. It may be helpful to keep students in the same groups across the action planning process.

Note: Obtain a photo of the neighborhood or field site that you have been using. Students can be more engaged when they recognize the location in the photograph. Be sure to use an altitude of 0.5 miles (setting Google Earth's eye elevation of 2500 feet) – this allows students to see a large stretch of neighborhood while still being able to discern details.

8. Lead the class in an exploration of the satellite photo and remind them of the work they did in Lesson 6. If possible, find social data maps (e.g., mean household income, population density) from Social Explorer (<http://www.socialexplorer.com/>) which correspond to the area of the satellite photo. Some sample questions:
 - What evidence of social drivers (population density, median income) are in play on the map?
 - What evidence of biophysical drivers (topography/elevation, water, etc.) are in play on the map?
 - What green spaces exist?
 - Are there any vacant lots? What could we do with those lots?
 - Where do you think the most pollution is coming from?
 - Is there room for improvement or is the site extremely compact?
9. Encourage students to go back over their data and readings around land use and pull out appropriate information and place it in the table provided. Also let them know that **they are required to include information about the biophysical drivers and social drivers when considering land use.**
10. When “Envisioning Possibilities,” here are some ideas that you can share with your students (this list is by no means inclusive):
 - Reclaiming abandoned lots
 - Creating urban wilds (untended green space)
 - Creating public information signposts about green spaces/wildlife
 - Improving conditions for growth (adding topsoil, eliminating invasive species)
 - Constructing sound barriers
 - Planting gardens
11. Give students time to discuss and write up their action plan within their groups by filling out the form in the student handout for this lesson.

Activity 9.2 Presenting the Action Plan

1. After students have discussed and designed their action plan, they will need to present it and defend it to their fellow classmates.
2. You can either have students present the changes to their action plans orally or using poster boards or PowerPoint. The size of your class and access to

- technology may influence this decision. It can take longer if you have each group present a PowerPoint. Consequently, if you have students use PowerPoint, you may still want them to print out the slides and hang them on the wall in a poster session.
3. If you decide to use posters or hang the PowerPoint slides on the wall - Distribute poster board and markers. Have students use their action plan outline to help create a poster describing their plan. (approx 5-10 minutes) Once groups have finished working on their plans, hang the posters at the front of the room. Allow students to browse each other's plans. They should rotate around the room and look at each group's plan and consider the similarities and differences across the plans.
 4. If you decide to have students present using PowerPoint – Have each group present their action plan. After they present, you may want to allow time for the audience to ask them a couple of questions regarding their plan.

Conclusion

1. Remind your students of the driving question of the module, “How do we develop cities that sustain biodiversity?”
 - Ask them to consider what they have learned over the course of the module, as well as the Action Plan process including their presentations.
 - Encourage your students to discuss what they learned – content as well as action – they can do to develop cities that sustain biodiversity.