Albanian Youth For Environmental Education

AYFEED

A Geographic Information Systems Workshop

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LESSON 5

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UF UNIVERSITY *of* FLORIDA
The Foundation for The Gator Nation

Lesson 5 – What Happens to Waste?

Required Internet Connectivity
Software: ArcGIS Explorer – a free GIS viewer for download at ESRI's website, and also a companion to this book.
Data: Boundary of Albania, Roads for Tirana, Land fill for Tirana, ArcGIS online.
Activity Description: Exploring concepts of waste and creating and managing your own data
Estimated Time: 90 minutes
Note: Time estimate considers that there could be more than one child per computer and that command of English is limited.

Back in Lesson 3 we talked about population density and its impacts on costal pollution. In this lesson we will talk about physical pollution, trash and waste that are created by people and that contribute to pollution. Let us try to understand where waste comes from, and where it goes after we throw it away. Let us also try to understand the harmful effects of waste on ecosystems and animals. Increasing our understanding is the first step to help us think on how to create solutions that minimize our negative footprints on the Earth.

1 Customizing data

- Open ArcGIS Explorer by double clicking over the icon on your desktop.

- After ArcGIS Explorer has opened, click the
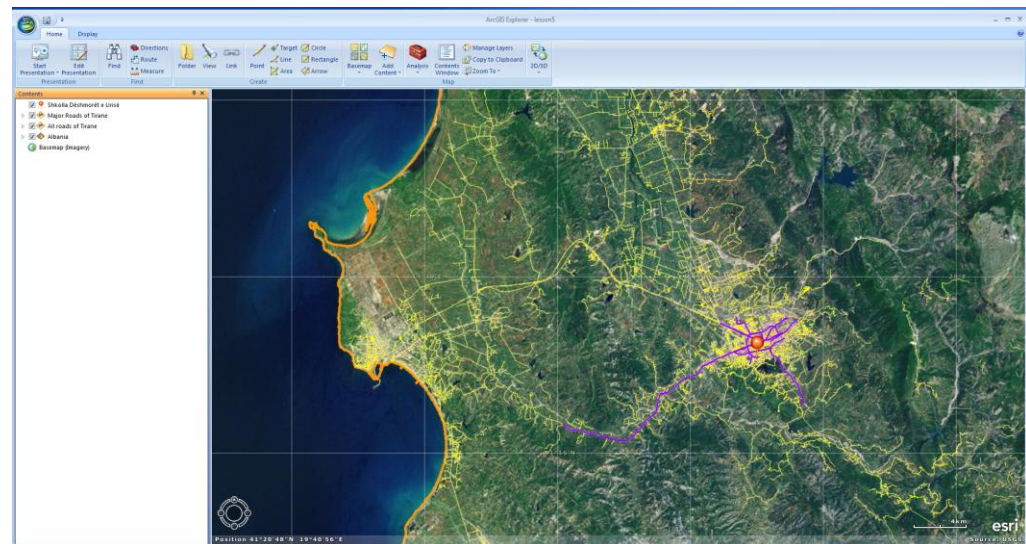icon at the top and then click Open.

- Now find your way to the file
~\AYFEED\Lesson5\lesson5.nmf

- Highlight the file **lesson5.nmf** and click the
button Open at the bottom

- Click over the icon at the top   of your
project and then click Save As.

- Highlight ArcGIS Explorer Map.

- Save the project file to your student folder
with the file name <u>mylesson5</u>.

Note how at the top border of your project ArcGIS Explorer shows the name of your project **mylesson5**.

- Click now on the orange push-pin
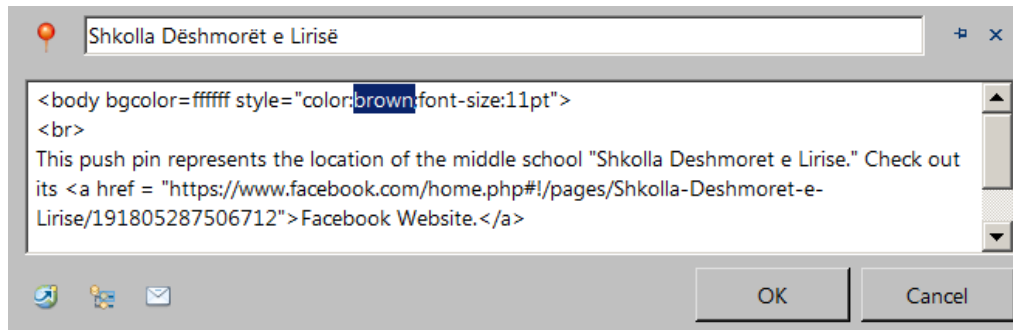
What does the push-pin show? _____

Where does the link in the popup window go? _____

Let us change the color of the text in the popup window.

- Make sure the popup window is opened. If it is not, just click over the push-pin again.

- Click over the small button at the bottom right of the popup window as shown below.

Your popup window should now look like the figure below.

- In the first line, replace the word 'brown' that is highlighted in blue with the word <u>green</u> or <u>red</u> or <u>blue</u>.

- Click OK and see how you changed the color of the text. Change it to another color if you like.

After you have seen how the text can be changed, close the popup window by clicking the **X** button at the top right window.

2 Creating Geographical Data

- In the Contents Window highlight the layer **Shkolla Deshmoret e Lirise** and click Go To. This will zoom you closer to the push pin.

- Now try to find your neighborhood.

- You can pan around or if you need, use the Navigation Control (round button at the bottom left of the map).

- Once you find your neighborhood, look for your house.

You will create a point for your house and then add it to the map with the Point tool.

- Once you find your house, go to the Ribbon under the Home tab, in the Create group, click on Point tool .

- Then click once on the location of your home on the map.

A popup window will appear.
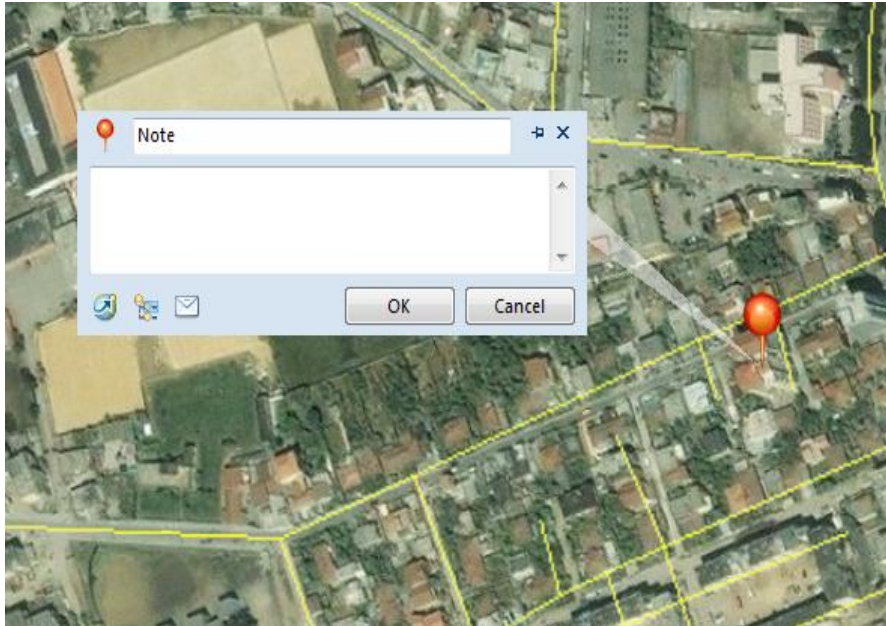
- Change the title of the popup window from Note to MyHome
- Type your home's address in the content box

- Click OK

- Repeat the same steps to create a new point that shows a store where you go to shop.

The store should be near your home or school, and should sell things that are eaten and that are wrapped in paper or plastic when they are given to you.

- When the popup appears for the new point, title the point from Note to MyStore, and in the content box type the name of what you buy there.

You should now have three points in your map and in your contents window:

- **Shkolla Dëshmorët e Lirisë**, **MyHome**, and **MyStore**
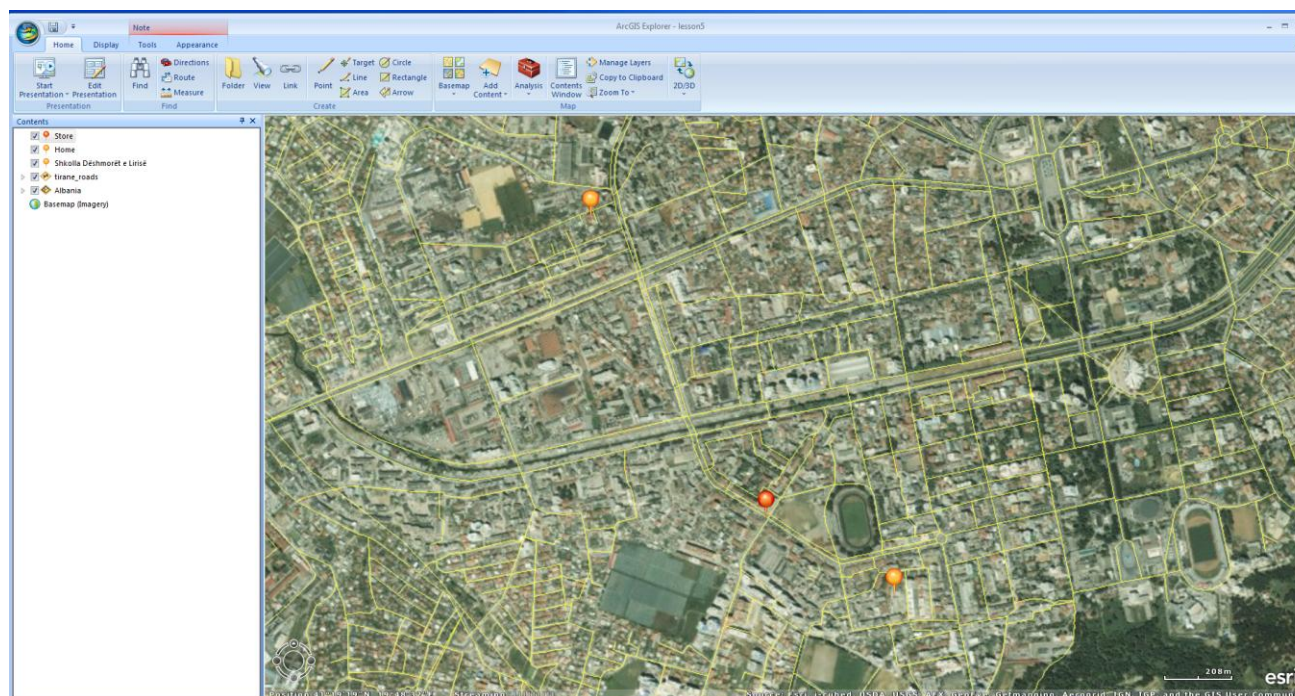

Your points will be in different locations then shown here.

Let us now change the symbol of these three points to be more meaningful.

- Right click on the layer MyHome in the Contents window and scroll to Symbol.

There are many symbols to choose from. It is good practice to choose symbols based on what they represent. That way the people that read our map will understand easier what our map means.

So we will scroll under Civic and then pick the symbol Housing.
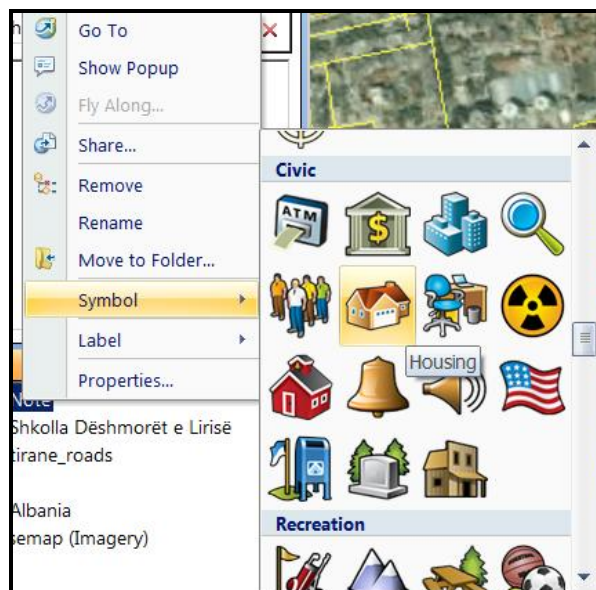
- Repeat the same steps for the other two points **MyStore** and **Shkolla Dëshmorët e Lirisë**.

What symbol did you choose from the Civic symbols to represent the school and why?

_____

What symbol should you choose from the Points of Interest symbols to represent your store?

_____

3 Imagine This - Thinking about Trash

Imagine buying something at the store as you walk to school. Let us say you decided to eat what you bought before you arrived at school.

What did you do with the trash (paper or plastic that was used for wrapping)?

Are there trash cans between your school and the store?

- If there are, put the trash can(s) on the map with the *Point* tool like you did in step 2

If there are not trash cans, then what happened with the trash?

Did you toss it in the street? Did you take it to school? And throw it away there?

What happened to the trash?

4 **Let us find out how far does trash travel.**

- In the Ribbon, Under the Home tab in the Map group, click on Add Content

- Click [⎙ Map Content Files...]

- Find **sharre_landfill** under the folder lesson5/data

Tirana's trash collection place.

What do you see?

_____

What is all the white fog under the symbol?

_____

Have you ever thought…

How trash gets from the trash cans to the trash collection place?

What happens to the trash once in the trash collection place?

or

How far does trash travel?

Let us now suppose that you threw away your trash at school, and let's find out how far that trash has traveled.

- Use the Navigation tool to zoom out so that you can see both the school and Tirana's trash collection site.

- In the Ribbon, under the Home tab, in the Find group look for Measure tool

- Click the Measure Tool

- On the Left side, click the line measure tool (first on the left).

- Now click on your school on the map.

- Then double click on the Tirana trash collection site on the map.

The length of the line that you have just drawn on the map between the school and the collection site, is shown in the blank box.

- Change the units between Kilometers or Meters, using the drop down menu

- Click Add to Map
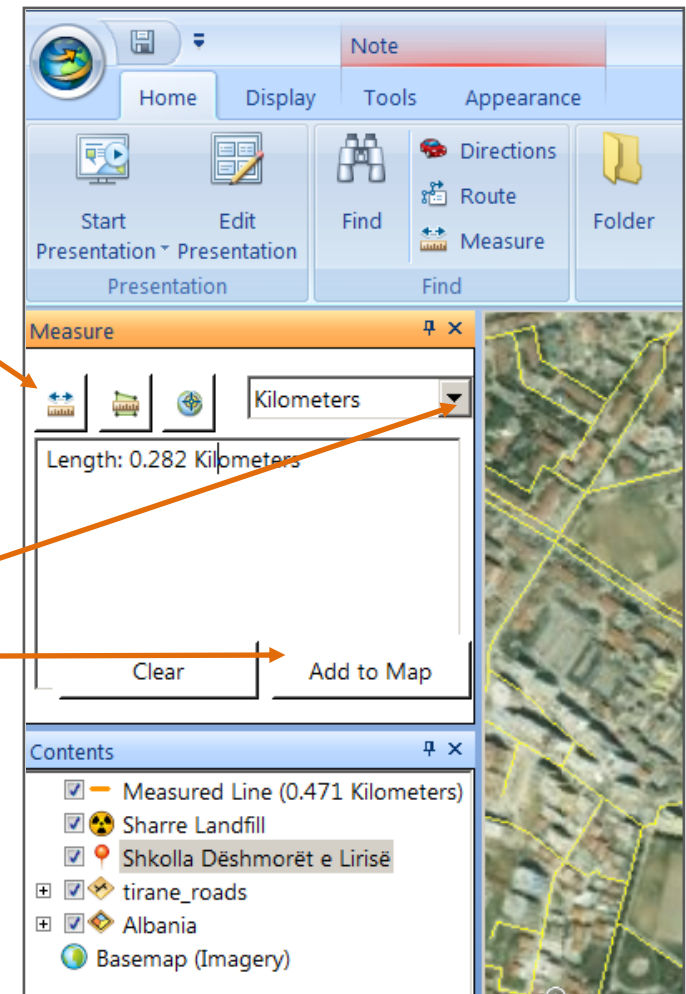
How far did the trash travel?   _____

Is this an accurate measurement of the distance the trash traveled? Why or why not?   _____
_____

Think of how much gas is needed to transport the trash, or how much carbon emissions are released. What other negative impacts on the environment happen because of these trips? Can you think of other expenses?
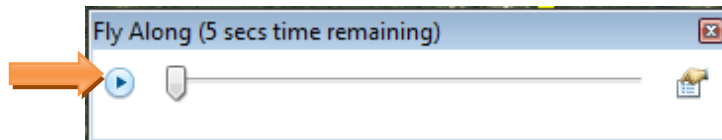
_____

_____

5 Fly Along

- Go to the Ribbon, under the Home tab, in the Map group Click 2D/3D icon.

- Click 3D Display.
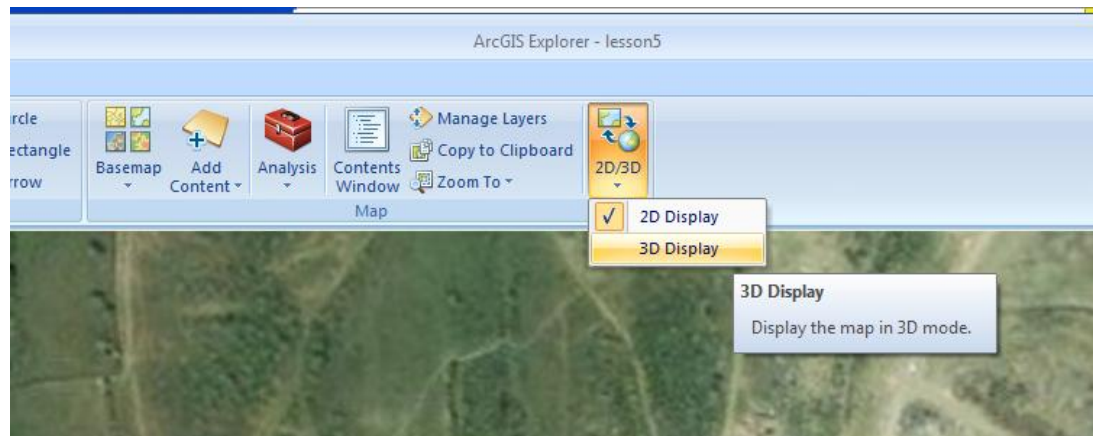
- Highlight the **Measured Line** layer in your Contents Window

- In the Ribbon, look for the Tools Tab, under the View Group, click Fly Along
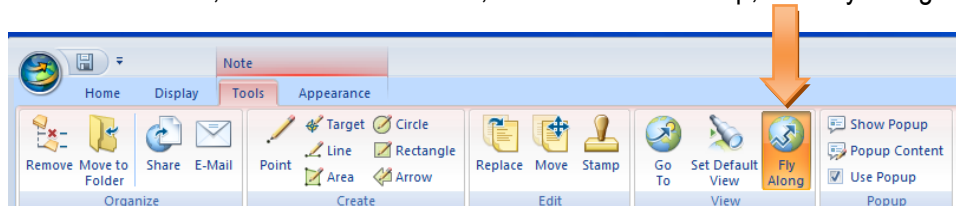
- A new popup window will appear

- Click the play button

What did you learn about the path the trash takes from the flight animation that you did not know from the static representation of the path?

_____

- Go to the Ribbon, click *the Home tab, in the Map* group, click 2D/3D icon.

- Change the display back to 2D Display.

Problems of waste

5

- Small trash seems unimportant but can have huge negative impacts on animals. Many animals see the bright, small pieces of trash as food, and eat the trash. Sea turtles commonly eat grocery bags and small plastic bags because they look like jellyfish in the water.

- Burning trash has a very harmful consequence on air quality; there is evidence that during the combustion of trash a byproduct of Dioxin is produced. Dioxin is extremely bad for human and environmental health. In 2000 a UNEP assessment found that the Sharre trash collection site produced toxic smoke from burning trash, and polluted water from leaching.

- Check out how long different types of trash take to decompose.

HOW LONG DOES IT TAKE TO DECOMPOSE

Paper Towel	- 2-4 weeks	Cigarette Butts	- 10-12 years
Banana Peel	- 3-4 weeks	Leather shoes	- 25-40 years
Paper Bag	- 1 month	Tinned Steel Can	- 50 years
Newspaper	- 1.5 months	Foamed Plastic Cups	- 50 years
Apple Core	- 2 months	Rubber-Boot Sole	- 50-80 years
Cardboard	- 2 months	Plastic containers	- 50-80 years
Cotton Glove	- 3 months	Aluminum Can	- 200-500 yrs
Orange peels	- 6 months	Plastic Bottles	- 450 years
Plywood	- 1-3 years	Disposable Diapers	- 550 years
Wool Sock	- 1-5 years	Monofilament Fishing Line	- 600 years
Milk Cartons	- 5 years	Plastic Bags	- 200-1000 yrs

This will create awareness amongst people that this is also one of the reasons related to Global Green House Effect. Thank you for Sharing, **CHANGE EVERYTHING**

- Click on the 🌐 icon in the top left.

- Click Save.

- Now exit out of ArcGIS Explorer.

Congratulations you have completed Lesson 5!
You have just learned how to create your own data and to add them to the map.
You also explored the world of trash, and asked and answered some very tough questions.
Way to go!