

## Teacher Notes



# Population Growth and Immigration

## Activity 1 Investigating Urbanization and Immigration in Late 19<sup>th</sup> and Early 20<sup>th</sup> Century America

### Activity at a Glance

- ◆ **Subject:** Social Studies
- ◆ **Subject Area:** U. S. History
- ◆ **Category:** Second Industrial Age
- ◆ **Topic:** Urban Growth
- ◆ **Grade Level:** 11
- ◆ **Prerequisites:** Students should have an understanding of the social and economic fabric of the United States before the Civil War.
- ◆ **Total Teaching Time:** 50 minutes

### Materials

- ◆ TI-83 Plus device
- ◆ Student Data Sheet: **Investigating Population Growth between 1800 - 1930**
- ◆ CellSheet™ Application
- ◆ **ImCit** CellSheet™ AppVar
- ◆ TI-Navigator™, TI-GRAPH LINK™ Cable, USB Cable
- ◆ Unit-to-unit Cables
- ◆ TI External Keyboard
- ◆ TI-83 Plus User Instructions

### *Activity Overview*

Students will choose one of the cities listed on their student data sheets to research, using the sources listed on their data sheets. After gathering information about urbanization and immigration in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries for their designated city, students will assemble in groups composed of experts on each of eight U.S. cities to organize and analyze their research using the **ImCit** CellSheet™ App. After collaboratively analyzing the trends and patterns of urbanization and immigration in these cities from 1870 to 1920, students will review their findings in a whole class debriefing discussion.

### ***Tip***

Allowing students to choose which city they are most interested in researching will increase their interest level in the activity. However, based on the number of students in your class, tally how many city “slots” are available to be chosen so that base groups will be composed of one expert on each of the eight cities to be analyzed in the spreadsheet. Depending on class size, some groups may contain more than one expert on a given city.

### ***Directions***

#### ***Before the Activity Begins***

Be sure each student has a TI-83 Plus that is loaded with the CellSheet™ Application. Send the **ImCit** AppVar to the students using TI-Navigator™, the TI-GRAPH LINK™ Cable, or USB Cable.

Place students in groups of eight, then pass out the Student Data Sheet.

#### ***During the Activity***

Record student city assignments and groups. Monitor student progress as they analyze the figures and information in the **ImCit** CellSheet™ AppVar, answering any questions necessary to facilitate their discussion of the questions on the Student Data Sheet.

Allow students who are researching the same cities to work together in order to share and verify their findings, if necessary.

Monitor group discussions, ensuring that all eight cities are reported on and discussed as the group completes and analyzes the **ImCit** CellSheet™ AppVar, and answers the debriefing discussion questions on the Student Data Sheet.

#### ***After the Activity***

Lead a class discussion that covers the debriefing questions the students answered on their Student Data Sheet.

## ***Student Data Sheet***

Name: \_\_\_\_\_

### ***Investigating Population Growth between 1800 and 1930***

Date: \_\_\_\_\_

One of the best ways to study population trends as America's history evolves is to look at the growth of major U.S. cities from the Early National Period up to the period just after the Stock Market Crash of 1929. You will be researching information describing and analyzing the rise of industrial America, including the growth of cities and the influence and impact of immigration. Use the sources listed below to locate the following information on your chosen city and on the populations of the top ten cities in the U.S. from 1870 to 1930.

- ◆ Population of New York City by the decade: 1800 to 1930
- ◆ Population of Philadelphia, PA by the decade: 1800 to 1930
- ◆ Population of Baltimore, MD by the decade: 1800 to 1930
- ◆ Population of Boston, MA by the decade: 1800 to 1930
- ◆ Population of Cincinnati, OH by the decade: 1800 to 1930
- ◆ Population of St. Louis, MO by the decade: 1800 to 1930
- ◆ Population of Chicago, IL. by the decade: 1800 to 1930
- ◆ Population of Charleston, SC by the decade: 1800 to 1930
- ◆ Populations of the top ten cities in the U.S. in the decades beginning after the Civil War and ending after the Stock Market Crash of 1929

### ***Information Resources***

- ◆ Historical Statistics of the United States: Colonial Times to 1970
- ◆ <http://www.census.gov/population/documentation/twps0027.html>.
- ◆ <http://www.census.gov/population/documentation/twps0029/tab14.html>.

After researching the cities, be prepared to answer the following questions:

1. What kind of information were you able to get from your primary source(s)?
2. Is the primary source information accurate? Justify your answer.
3. How can this information be cross-referenced?
4. Why do you think the statistics are presented in 10-year intervals as opposed to random years?

**Recording the Information**

Assemble in groups. Each group should have at least one researcher from each of the eight cities researched to analyze the information on your assigned city in the **ImCit** CellSheet™ AppVar using the following procedure.

1. What would you need to do to find the average population change for each of the cities on your spreadsheet between the years 1860 and 1930?
2. Why would you want to know the average population change for these years? What kinds of inferences can be made about a city with a significant percentage of change?
3. Record below the average percentage of change for each city on the spreadsheet.

(See the **Instructions for Using the TI-83 Plus** for directions on how to calculate average population change in the CellSheet™ App.)

<u>City</u>	<u>Average Population Change 1860 – 1930</u>
-------------	--

4. Find the percentage of growth for the most populated city in the analysis.  
The Average Population Growth for \_\_\_\_\_ is \_\_\_\_\_% from \_\_\_\_\_ to \_\_\_\_\_.  
(year) (year)

***Analyzing the Information Further***

Using the information in the **ImCit** AppVar, answer the following questions:

1. What cities experienced the highest rate of population growth between 1800 and 1930?
2. Which year had the highest rate of population growth?
3. Which city had the highest rate of population growth before the Civil War?
4. Which city had the highest rate of population growth after the Civil War?
5. By the turn of the century, which city had grown the most in its population?
6. Why do you think Chicago grew faster than Baltimore?
7. What generalizations can you make about the growth of United States cities in the second half of the nineteenth century?
8. What factors should be taken into consideration when analyzing the reasons for the rapid growth between 1880 and 1910?



## Instructions for Using the TI-83 Plus

### Transferring the ImCit CellSheet™ AppVar from the Teacher's TI-83 Plus

1. Connect the devices using the unit-to-unit cable. Press the cable firmly into the port at the base of each device.

2. Prepare the student's device to receive data.

- a. Turn the device on.
- b. Press **2nd** **[X,T,θ,n]** to prepare the TI-83 Plus to receive data.



```
SEND RECEIVE
1: All+...
2: All-...
3: Prgm...
4: List...
5: Lists to TI82...
6: GDB...
7↓Pic...
```

- c. Highlight **RECEIVE** by pressing **▸**.



```
SEND RECEIVE
1: Receive
```

- d. Press **ENTER**. **Waiting...** is displayed on the device.



```
WAITING... █
```

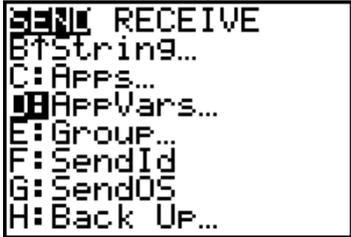
3. Prepare the teacher's device to send data.

- a. Turn the device on.
- b. Press **2nd** **[X,T,θ,n]** to prepare the device for linking.



```
SEND RECEIVE
1: All+...
2: All-...
3: Prgm...
4: List...
5: Lists to TI82...
6: GDB...
7↓Pic...
```

- c. Press **▲** or **▼** until **D:AppVars...** is highlighted.



```
SEND RECEIVE
B: String...
C: APPS...
D: APPVars...
E: Group...
F: SendId
G: SendOS
H: Back Up...
```

d. Press **ENTER** to view the AppVars. Move the cursor to **ImCit**.



e. Press **ENTER**. Press **▶** to highlight **TRANSMIT**. Press **ENTER** to start data transfer.



4. If the transfer is successful, then the sending and receiving devices will display text as in the examples to the right.

Download the AppVar to other students using the same method. Substitute your device for the teacher's device when using these instructions.



Teacher TI-83 Plus



Student TI-83 Plus

### Accessing the ImCit CellSheet™ AppVar

1. Open the **CellSheet** App.

a. Press **APPS**, then press **▲** **▼** to highlight **CellSheet**. Press **ENTER** to begin the CellSheet™ Application.



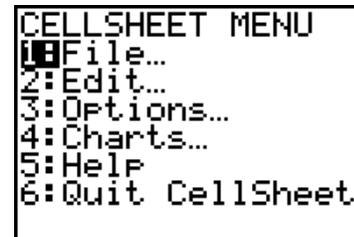
b. Press **ENTER** (or any key) to move past the information screen.



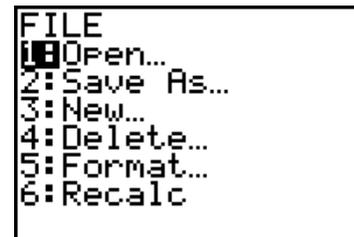
c. Press **ENTER** (or any key) to move past the **CellSheet** Help screen.



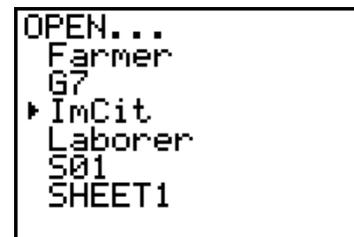
d. If the **ImCit** spreadsheet does not appear in the window, press **GRAPH** to display the CellSheet Menu.



e. Press **1** or **ENTER** if **1:File** is highlighted.



f. Press **1: Open**, or **ENTER** if **1: Open** is highlighted. Use the **↓** to move to **ImCit**.



g. Press **ENTER** when the arrow points to **ImCit**. You should now have the same screen as the one that appears to the right.

ImCi	A	B	C
1	CITY	1800	1810
2	BALTIMORE		
3	BOSTON		
4	CHARLESTON		
5	CHICAGO		
6	CINCINNATI		
A1:	"CITY		[Menu]

### Calculating Average Percent of Change in the CellSheet™ Application

1. Within the spreadsheet (in this case, **ImCit**), go to any column labeled “Percent Change.” This example will calculate the average percentage of change for the city of Baltimore, in Column C.

ImCi	A	B	C
1	YEAR	BALTIM	PERCE
2	1800	26514	
3	1810	46555	75.586
4	1820	62738	34.761
5	1830	80620	28.503
6	1840	102313	26.908

C1: "PERCENT CHAN(←) Menu|

- a. First, look at the range of cells in Column C containing percentage values. In this case cells C3 – C15 contain values. Therefore, you will want to type in a formula for calculating the average, or mean, value of cells C3 – C15 in cell C16. Use  $\square$  to reach the end of that range, in this case, cell C 16. Press **ENTER** when the cursor gets to C16, so that you can see the cursor blinking in the edit line:

ImCi	A	B	C
11	1890	434439	30.732
12	1900	508957	17.153
13	1910	558485	9.7313
14	1920	733826	31.396
15	1930	804874	9.6819
16			

C16: |

- b. Now that the cursor is blinking in the edit line, press **STO▶** to get an equal sign in front of the formula. This signals the application that it will need to calculate a formula.

ImCi	A	B	C
11	1890	434439	30.732
12	1900	508957	17.153
13	1910	558485	9.7313
14	1920	733826	31.396
15	1930	804874	9.6819
16			

C16: =|

- c. Press **GRAPH** to display the FUNCTIONS menu. Press either **2** or move the cursor to **2: mean(**.

FUNCTIONS			
1:	sum(		
2:	mean(		
3:	min(		
4:	max(		
5:	If(		
6:	rand		

Press **ENTER**. The display should look like the example at the right.

ImCi	A	B	C
11	1890	434439	30.732
12	1900	508957	17.153
13	1910	558485	9.7313
14	1920	733826	31.396
15	1930	804874	9.6819
16			

C16: =mean(

- d. Type in the range of cells you would like to average, in this case C3 to C15. To do this, press **2nd** **PRGM** to type C, and then press the **3**. Press **ALPHA** **.** (decimal key) to enter a colon. Press **2nd** **PRGM** again to get C, followed by **15**. Close the parentheses by pressing **)**. Your screen should look like the example at the right.

InCi	A	B	C
11	1890	434439	30.732
12	1900	508957	17.153
13	1910	558485	9.7313
14	1920	733826	31.396
15	1930	804874	9.6819
16			
C16: =mean(C3:C15)			

- e. Press **ENTER**, and CellSheet™ will calculate the formula. When it is finished with the calculation, it will place the value in the cell where you typed the formula.

InCi	A	B	C
12	1900	508957	17.153
13	1910	558485	9.7313
14	1920	733826	31.396
15	1930	804874	9.6819
16			31.192
17			
C17:			[Menu]

2. Follow these steps, changing only the cell references for all other cities for which you would like to find the average rate of change.