Explore the world map

In this exercise, you will explore the world map using ArcMap software. To do so, you will use several navigation tools to get to specific locations on a GIS map of the world.

During your exploration, you will be asked geographic and cultural questions about different countries, and you will be provided with hints to help you answer them. You will also use some of ArcMap's tools to get additional information about the countries you visit.

After completing this exercise, you will be able to:

- Open a GIS map.
- Explore geographic features and layers.
- Use the Identify tool to access information about map features.
- Explore scale in a GIS map.
- Change the symbol for a layer.
- Display MapTips for a layer.
- Use the map navigation tools.

Estimated time to complete: 20 minutes

Before you begin
The data for this exercise is contained in the following files:

- BigPicture.exe (Module data file)

If you have not downloaded one of these files, you should download the data now.

Step 1  Open a map document
Start ArcMap by clicking the Start menu, pointing to All Programs, pointing to ArcGIS, then clicking ArcMap 10.

Note: If you have a desktop shortcut icon for ArcMap, you can double-click it to start ArcMap.

In the ArcMap Getting Started dialog box, under Existing Maps, click "Browse for more."

Browse to the location where you downloaded the data for this course (the default download location is C:\Temp\VirtualCampus).
In the StartGIS10\BigPicture folder, double-click Explore_the_world.mxd to open the map document.

You see a map of world countries. The map currently shows countries in the Far East.

VIEW RESULT

Can't find your data?

If you like, you can maximize ArcMap so it fills your entire screen view. If you do this, use your taskbar to navigate between this window and your ArcMap window.

**Step 2**  Determine your location

In this step, you will be asked to identify a country in the current map display. You may know the name of the country immediately, or you may need to read a series of hints to figure it out.

Locate the orange country in the middle of the display.

This country is an archipelago that spans three time zones. One of the main islands has a red X on it.

![Question]

Name this country.

- Malaysia
- Japan
- Indonesia
- Phillippines

If you answered correctly, congratulations! Please go on to step 3.

If you do not know the name of the country, read the hint below and try again.

**Hint:** This former Dutch colony has several islands that are habitats for orangutans.

![Question]

Do you know the answer now?

- Malaysia
- Japan
- Indonesia
- Phillippines

If you do, well done. Go to step 3.

If not, read the next hint and try again.
**Hint:** You may enjoy some of the main agricultural crops produced in this country in a dessert pudding (rice, tapioca, or cocoa).

Do you know the name of the country now?

- Malaysia
- Japan
- Indonesia
- Philippines

If so, nice job. Proceed to step 3.

If you do not know, perhaps the next hint will help you.

**Hint:** This country's capital city is Jakarta.

Hopefully, you have determined the name of the country. Don't worry if you haven't; you will learn it in the next step.

### Step 3  Use the Find tool to determine the country name

In this step, you will verify the name of the country using the Find tool. The Find tool lets you search for information that is associated with the map features.

On the Tools toolbar, click the Find tool .

The Find dialog box opens. The Features tab should be active at the top of the dialog box.

In the text box next to Find, type **Rupiah**.

The rupiah is this country's currency. Currency data is stored in the attribute table for the Countries layer.

In the drop-down list next to In, choose Countries.

Click Find.

One search result displays at the bottom of the Find dialog box.

Right-click anywhere over the search result and choose Zoom To.

If necessary, move the Find dialog box out of the way so you can see the map.
The country is now centered in the map display.

Right-click the search result again and choose Identify.

The Identify window opens. On the bottom left side of the Identify window, all the fields that are contained in the attribute table for the Countries layer are shown. The name of the feature that was found by the Find tool displays at the top of the Identify window.

**VIEW RESULT**

You can now see that the name of the country is Indonesia.

Close the Identify window and the Find dialog box.

**Step 4  Navigate to a new location**

You just visited the Far East. You are now off to a new location, another island country that historically had many immigrants come from Indonesia, the country you last visited. You will be asked a series of questions about the new country. Read them carefully, and good luck!

You will navigate to the new location using a spatial bookmark.

From the Bookmarks menu, choose Africa.

The continent of Africa is centered in the map display.

**VIEW RESULT**

At the top of the map display area, look at the scale box.

!? What is the current map scale?

- Answer

On the Tools toolbar, click the Zoom In tool.

Draw a large rectangle that encompasses southern Africa.

**VIEW RESULT**

Southern Africa is now centered in the map display.

Check the map scale now that you have zoomed in.

!? What is the map scale now?

- Answer
When you zoom in on a GIS map, the map scale gets larger.

REVIEW CONCEPT

Southern Africa is now easier to see, and the countries are bigger. The country you are interested in is the big red one to the east of the southern tip of Africa.

This Indian Ocean island country is famous for growing and exporting high-quality vanilla beans.

- Name this country.
  - Madagascar
  - Australia
  - Cuba
  - Seychelles

If you know the correct answer, good job. Continue on to step 5.

If you do not know the answer, perhaps the following hint will help you.

**Hint:** This country is the world's fourth largest island.

- Do you know the name of the country now?
  - Madagascar
  - Australia
  - Cuba
  - Seychelles

If you do, congratulations. Go on to the next step.

If you do not, read the next hint and try again.

**Hint:** A French colony from 1896 to 1960, French is the official language of this country.

- Do you know the name of this country now?
  - Madagascar
  - Australia
  - Cuba
  - Seychelles
If you don't know the country name yet, you will learn another way of finding it in the next step.

**Step 5**  **Confirm the country name using the Identify tool**

Now you will see whether the answer you came up with in the previous step is correct.

On the Tools toolbar, click the Identify tool.

Click the red island country to the east of the southern tip of Africa.

The Identify window displays information about the country feature you clicked.

In the Identify window, you can see that the name of the country is Madagascar.

Notice that the CNTRY_NAME field at the bottom left also has a value of Madagascar.

The Identify tool is a powerful way to access information about features on a GIS map. You used this tool in step 3 in conjunction with the Find tool. You now know you can also use the Identify tool by itself to interactively get information about map features.

Use the Identify tool in the map to answer the following questions.

What country is immediately west of Madagascar?

What is the population of this country? Hint: The POP_CNTRY field contains this information.

If you like, explore some of the other countries using the Identify tool.

When you are finished, close the Identify window.

**Step 6**  **Explore another part of the world**

Now you are off to another new location. The next country is much colder than the places you have visited so far. Read the questions and hints carefully. Safe travels!

You will navigate to countries north of the equator.

From the Bookmarks menu, choose North of Equator.

The country you are looking for gained its independence in 1918 but was annexed by the Soviet Union in 1940. It then...
regained its independence in 1991.

Do you know the name of the country?
- Moldova
- Estonia
- Latvia
- Ukraine

If you know the answer, good work. Go on to the next step.

If you do not know, continue reading.

You know the country in question had relations with the Soviet Union, so you will navigate to Eastern Europe and the western part of the former Soviet Union.

Using the Bookmarks menu, zoom to the Western Soviet Union.

Hint: This country is south of Finland, east of Sweden, west of Russia, and north of Latvia.

Did the hint help? Do you know the name of the country now?
- Moldova
- Estonia
- Latvia
- Ukraine

If so, go to step 7.

If not, keep reading.

You have obtained more new information. You know that the country claims over 1,000 islands in the Baltic Sea.

Go to the Baltic Sea bookmark.

Hint: The country in question is located in the middle of the map display and is bright red in color.

What is the country?
- Moldova
- Estonia
- Latvia
This one may have puzzled you. Now you will see whether the answer you came up with is correct.

Using the Identify tool click the red country in the middle of the map display.

Hopefully, you had the right name for the country, but if you didn't, you know it now—Estonia.

Look at the Identify window to answer the following question.

What is this country's currency?

Close the Identify window.

**Step 7  Add a layer to the map**

It is very cold, but you are not off to warmer destinations just yet. Pull that scarf tight and keep that coat buttoned up.

Your exploration continues.

This time, you will add a layer of data that will aid you in your search.

On the Standard toolbar, click the Add Data button.

The Add Data dialog box opens.

In the **Home - StartGIS10\BigPicture** folder, double-click **World.gdb**.

Click **Cities**, then click Add.

The Cities layer is added to the top of the Table of Contents and city features display on the map. ArcMap has given the layer a default symbol—a small diamond in a random color.

**VIEW RESULT**

You will change the symbol.

In the Table of Contents, click the diamond symbol below Cities.

The Symbol Selector opens. Here, you can change the shape, size, color, and other properties of the symbol.

On the left side of the Symbol Selector, scroll down and click the Circle 3 symbol.

On the right, click the Color box and click a bright yellow color.
Step 8 Display MapTips for cities
In this step, you will display MapTips for the cities. A MapTip is text that displays when you hover your mouse pointer over a map feature. MapTips are a property of a layer in ArcMap.

In the Table of Contents, right-click Cities and choose Properties.

The Layer Properties dialog box opens.

Click the Display tab at the top of the dialog box.

In the Display Expression area of the dialog box, check the box next to "Show MapTips using the display expression.”

Make sure the Field is set to NAME.

Click OK to close the Layer Properties dialog box.

Hover your mouse pointer over one of the city symbols on the map. **Note:** You may need to hover over the middle of the city symbol.

The name of the city displays.

MapTips provide an easy way to get information from a GIS map. The information that displays can be customized based on the information stored in the layer's attribute table. In this case, the city names have been set to display.

Try hovering your mouse pointer over some of the other cities on the map.

Step 9 Use the Pan tool to navigate
Now you will use another ArcMap tool for map navigation—the Pan tool.

On the Tools toolbar, click the Pan tool [p].

Click anywhere on the map and drag to the left until Estonia is at the far left side of the map.
Notice that when you pan the map, the scale does not change.

Hover your mouse pointer over the cities until you locate the city of Moscow, Russia (it is to the east of Estonia).

If necessary, use the Pan tool to center Moscow in the map display.

Do you know what alcoholic beverage was patented in 1894 by Dmitri Mendeleev as the principal Russian alcoholic beverage?

If you do not know the answer, read the following hint.

**Hint:** This alcoholic beverage is popular not only in Russia, but throughout other countries along the Baltic Sea as well.

Did the hint help? The alcoholic beverage in question is vodka. This region of the world is well known for its vodka.

Using the Bookmarks menu, zoom to Vodka Producers.

The bright orange country in the middle of the map display is also a country well known for its vodka production.

![Do you know the name of this country?](image)

If so, great job! Skip to the end of the step to confirm your answer.

If not, use the Identify tool to click the bright orange country in the middle of the map display.

Find the name of the country in the Identify window.

Close the Identify window.

Did you have Poland as the country name? Great! Next, you will travel to a warmer climate.

**Step 10** **Navigate to another location**

This next country is the last one in your exploration of the world. One final good luck to you!

The country you are looking for is the third largest country in South America. It is known for many things, including its three contrasting regions: arid desert, dense forest, and large mountains.

On the Tools toolbar, click the Full Extent button 🌍.
You see the whole world.

Click the Zoom In tool and draw a box around the continent of South America.

Use the Pan tool as needed to center South America in the map display.

Now, this is better—you can take your coat off now.

There are quite a few cities in this area of the world. It would be easier to see the countries if the cities weren't showing.

In the Table of Contents, uncheck the box next to the Cities layer.

The cities no longer display on the map.

VIEW RESULT

The country you are looking for contains the heart of the Inca Empire in the ceremonial center of Machu Picchu.

Do you know the name of the country?

- Brazil
- Chile
- Argentina
- Peru

If you do, you have reached the end of your world exploration. Go to the next step.

Otherwise, keep reading.

**Hint:** In this country, you can find both the Andes Mountains and the headwaters of the Amazon River.

Do you know the name of the country now?

- Brazil
- Chile
- Argentina
- Peru

If you got the correct answer, your travels have come to an end. If you do not, here is one last hint.

**Hint:** This country is located midway along the western coast of South America.

Now that you know the location of the country, you will zoom to it.
Use the Zoom In tool to draw a box encompassing the middle western coast of South America.

Now can you name the country?
- Brazil
- Chile
- Argentina
- Peru

Step 11 Get additional information using the Identify tool

Now you will find out more information about Peru, the last country you visited.

Use the skills you have acquired with ArcMap's navigation tools and the Identify tool to answer the following questions.

What are the names of the two countries that border Peru to the north?
- Answer

Of these two northern neighbors, which has the larger population?
- Answer

To which country does the group of islands off the western coast of South America belong?
- Answer

Close the Identify window.

From the File menu, choose Exit.

Click No when prompted to save changes to the map document.

In this exercise, you traveled and explored the world, learning how to use several ArcMap tools along the way. You navigated using spatial bookmarks and the Zoom In, Zoom Out, and Pan tools. You also used the Find and Identify tools to obtain additional information about features.

You should now have a sense of the dynamic nature of GIS maps. Unlike a paper map, a GIS map is more than what meets the eye. With just a few mouse clicks, you can find a wealth of information about the features you see on the map.

You will continue to work with the ArcMap tools you used in this exercise throughout this course.