What's the range?

from the Esri GeoInquiries™ collection for Human Geography

Audience – Human geography	Time required – 15 minutes

Activity	Students will analyze how the market areas for specific chain stores change based on the type of store.
APHG Benchmarks	APHG: I:C1. Analyze the human organization of space and reasons… APHG: VII.B. Apply Christaller's central place theory.
Learning Outcomes	• Students will be able to identify and explain the spatial hierarchy of major chain stores in Houston, Texas. • Students will be able to analyze the range and market areas for coffee shops, fast food restaurants, home improvement stores, and luxury department stores.

Map URL: http://esriurl.com/humanGeoInquiry14

❓ Ask

Where is Houston?

- → Click the link above to launch the map.
- ❓ What major city is visible? *[Houston, Texas]*
- ❓ Where is Houston situated? *[On the Gulf Coast of Texas]*
- → Open and read the Map Note.
- ❓ What is the commuter adjusted population for Houston? *[2.8 million]*

⊕ Acquire

What is a threshold?

- → Threshold is the population needed to support a certain type of service; range is the distance that people are willing to travel for a service.
- → Click the button, Bookmarks. Select Houston.
- → Explain that students will explore the locations of four major stores, and will vote on which type of store each layer represents based on its spatial pattern. The four choices are: major coffee shop, major fast food restaurant, major home improvement store, and luxury department store chain.

🔍 Explore

Can you predict the service industry in Houston?

- → If you see a link to Modify Map (upper right), click it.
- → With the Details button underlined, Click the button Show Contents of Map (Content).
- → Turn on the layer, Store 1.
- ❓ Which type of service do you think is represented, and why? *[Layer is a major coffee shop.]*
- → Rename Store 1 to Coffee Shop.
- → Turn on the layer, Store 2.
- ❓ Which type of service do you think is represented, and why? *[Layer is a major fast food restaurant.]*
- → Rename Store 2 to Fast Food Restaurant.
- → Turn on the layer, Store 3.
- ❓ Which type of service do you think is represented, and why? *[Layer is a major home improvement store.]*
- → Rename Store 3 to Home Improvement Store.
- → Turn on the layer, Store 4.
- ❓ Which type of service do you think is represented, and why? *[Layer is a luxury department store.]*
- → Rename Store 4 to Luxury Department Store.

more ▶

Analyze

How does the range for a home improvement store compare to a coffee shop?

→ Measure the distances between a few coffee shops. (See the Measure ToolTip below.)

? What appears to be the range for a coffee shop? *[It varies based on the part of Houston.]*

? Why does the range vary between the central business district (CBD) and other areas of Houston? *[It varies because of land use and the nature of the CBD.]*

→ Use the Measure tool to measure the distances between a few home improvement centers.

? What is the range for a home improvement center? *[The range is more uniform, between four and six miles.]*

? Why is there such a difference between these two store ranges? *[Coffee shops are not specialized, and people travel shorter distances for coffee; home improvement centers are specialized, and people travel farther for things to fix their home.]*

Act

Why are there areas in Houston without any of these major stores?

→ Turn on the Census Tracts layer.

→ If necessary, zoom to Houston.

? What are possible reasons why some areas of Houston do not have these services? *[Residential or zoning issues, an area being part of or not part of the CBD, socioeconomic variables, and cost of land.]*

MEASURE	RENAME A LAYER
• Click the Measure tool. • Select Distance, and then choose the unit of measurement. • Click once to start measuring, click again to change direction, and double-click to stop measuring.	• Click the Content button. • Click the icon for More Options. • Click Rename. • Type in the new name, and click OK.

Next Steps

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THEN TRY THIS...
- Use the Summarize Within analysis tool to apply hexagons and then analyze the distribution of fast-food places.
- Use the Perform Analysis function to aggregate store count by census tract for each type of store. Then, use Show Table to explore the characteristics of the census tracts where you find the most coffee shops, fast food restaurants, and home improvement centers.

TEXT REFERENCES

This GIS map has been cross-referenced to material in sections of chapters from these texts.

- *Human Geography by McGraw Hill – Chapter 17*
- *The Cultural Landscape by Pearson – Chapter 12*
- *Human Geography: People, Place, and Culture by Wiley Press – Chapter 9*