



AP HUMAN GEOGRAPHY 1.3

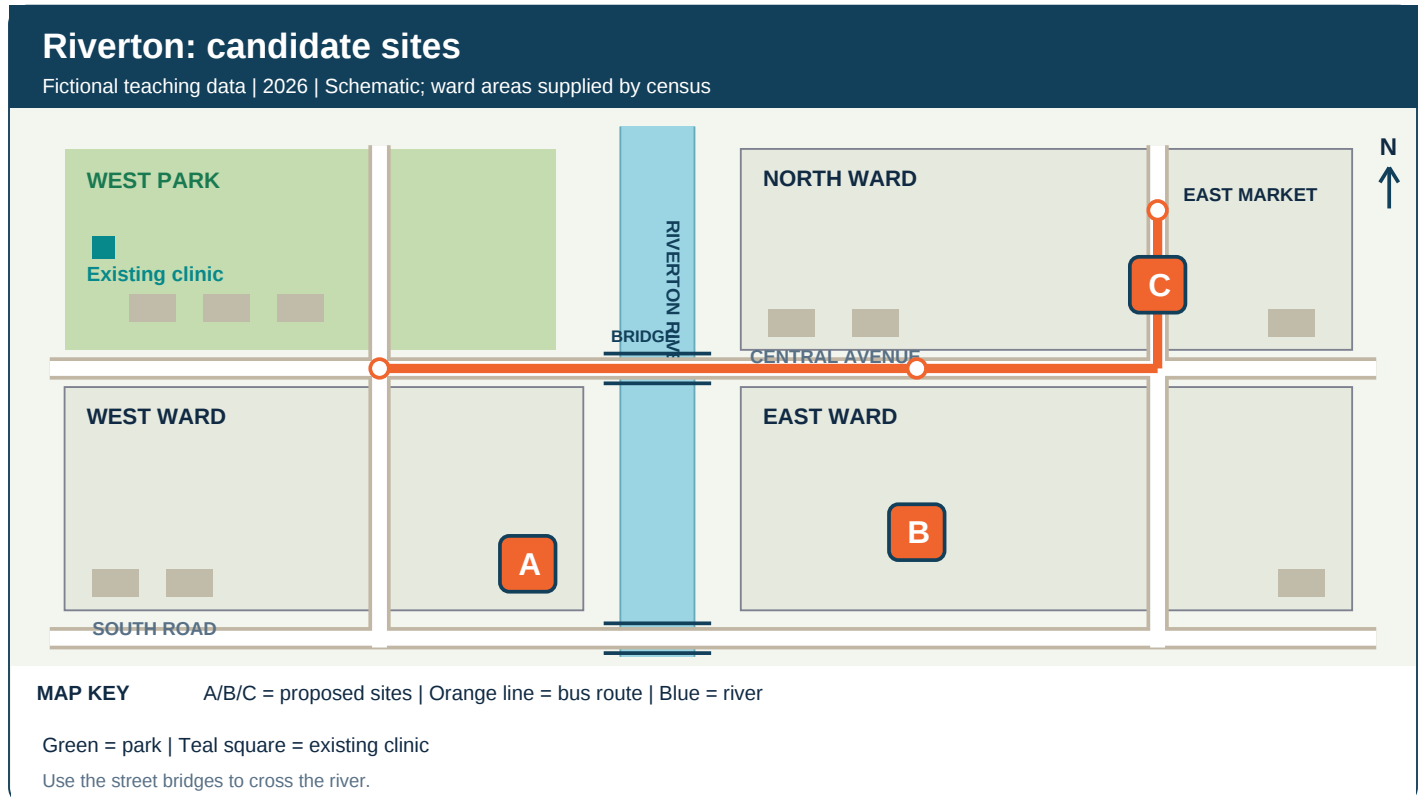
The Power of Geographic Data

How maps and location-based evidence help people make real decisions.

A LEARNING LAB CASE FILE

Where should help go?

Riverton can build one combined cooling and community health center. Compare the three labeled candidate sites on the map.



TRY THIS

Site A is on the west bank, south of West Park. Site B serves East Ward. Site C is beside East Market. Circle your first choice: A B C
What visible clue influenced you? _____

THE TWIST

You will see new evidence. A smart geographer is allowed to change an early prediction.

YOUR MISSION

Use ten Learning Lab investigations to practice how real decisions change with the data.

Will you make it to work by 4?

School ends at 3:10. Your shift starts at the mall at 4:00. A bus schedule connects places with times.

ROUTE 12 | SCHOOL > LIBRARY > MALL

Riverton Transit - fictional weekday afternoon schedule

HIGH SCHOOL

3:15 PM

3:45 PM

LIBRARY

3:27 PM

3:57 PM

MALL

3:42 PM

4:12 PM

Miss the first bus? The second one arrives after your shift starts.

PEOPLE

How many students need a ride after practice?

PLACE

Which stop is beside the school entrance?

MOVEMENT

Which bus gets you to the mall before 4?

RISK

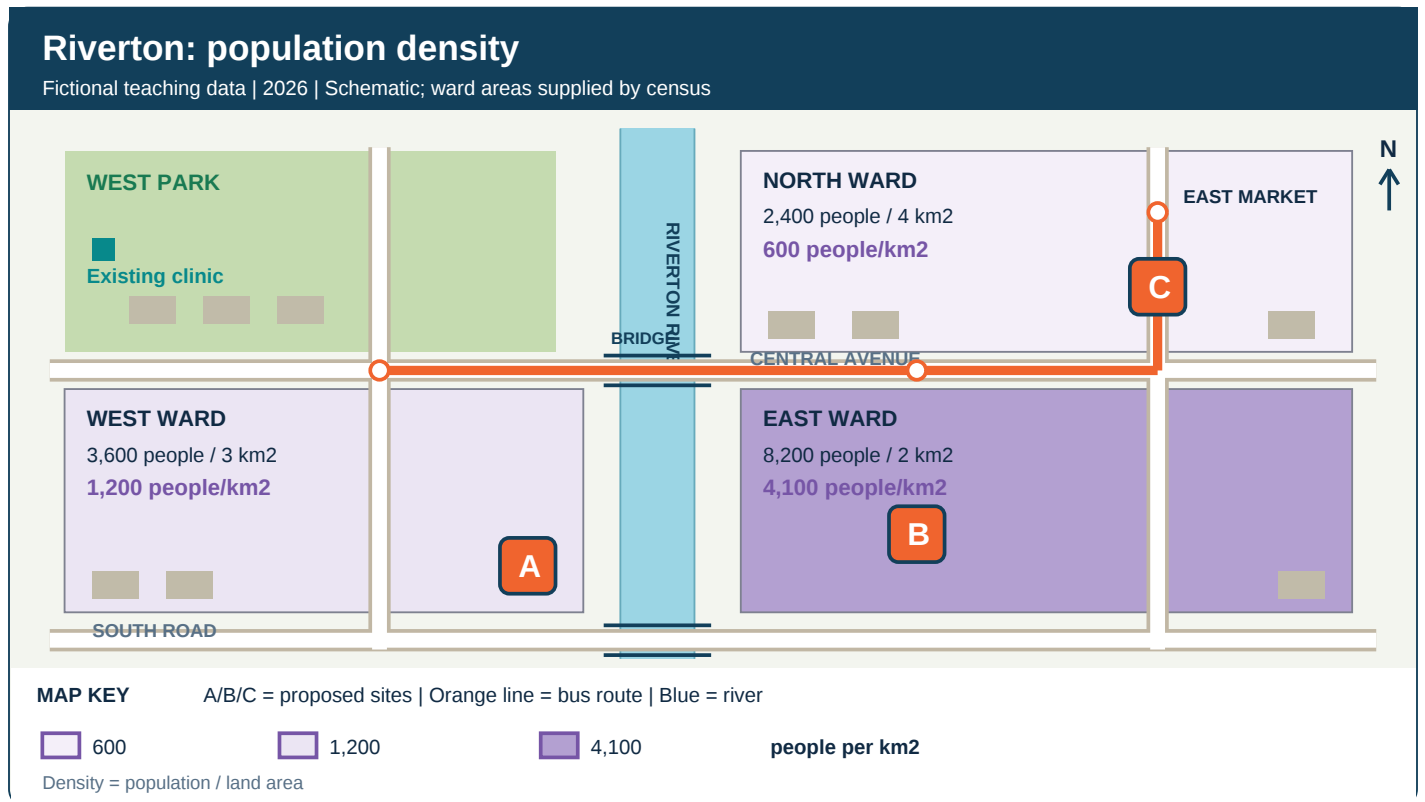
Is the walk from the stop shaded and safe?

YOUR TURN

Which departure works? Underline the arrival time that proves it. A schedule is geographic because it describes movement between named places.

Geospatial data answers: Where?

Geo means Earth. Spatial means arranged in space. Geospatial data connects information to a location.



COUNT OR DENSITY?

East Ward: $8,200 \text{ people} / 2 \text{ km}^2 = 4,100 \text{ people per km}^2$. Count and density answer different questions.

READ THE SHADING

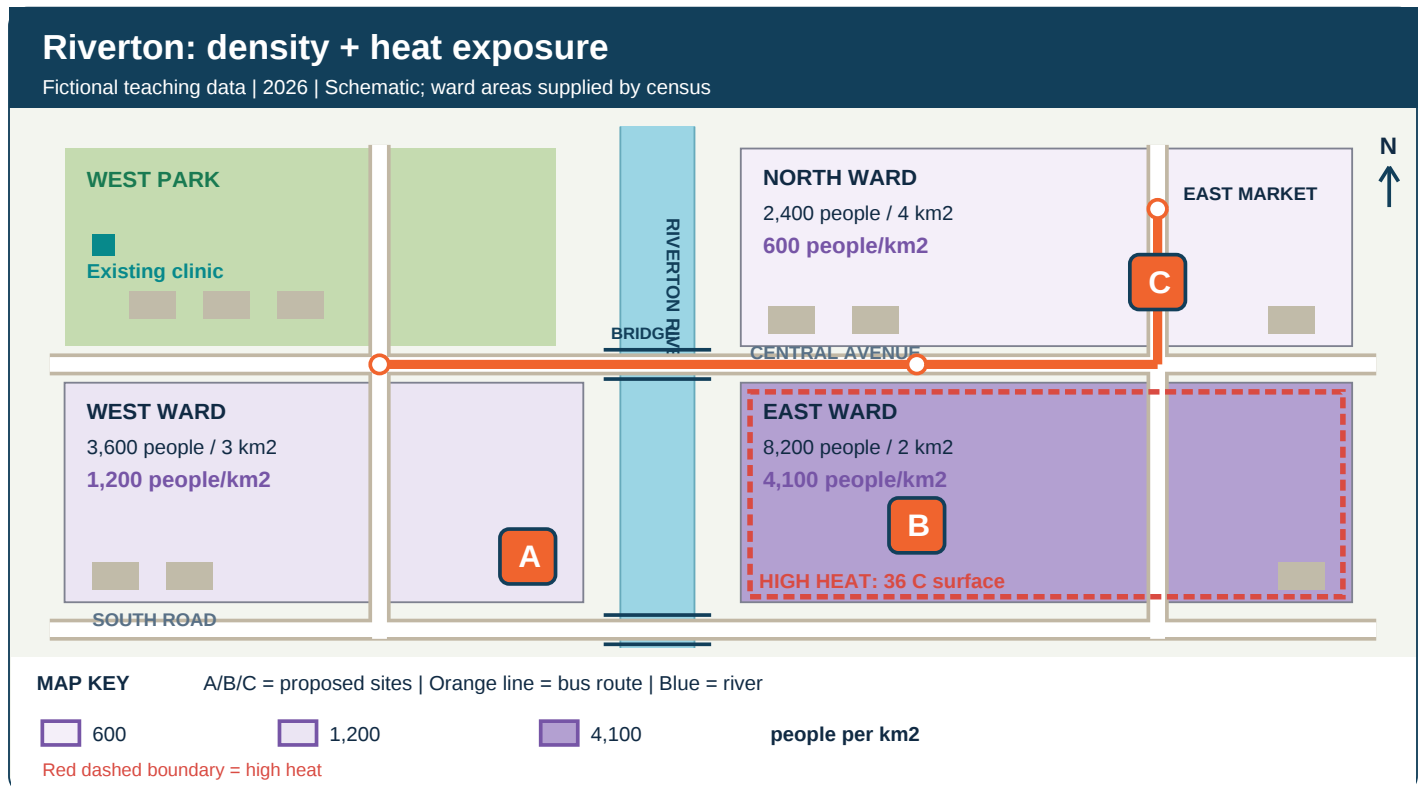
East Ward is darkest: 4,100 people/km². North Ward has 600. More people share each unit of land in East Ward.

THE POINT

Location lets separate facts become a visible pattern.

Patterns are evidence hiding in plain sight.

A pattern is an arrangement you can notice and describe: clustered, dispersed, linear, high, low, near, far, or overlapping.



NOTICE

East Ward: 4,100 people/km². The red boundary marks high heat (36 C).

ASK WHY

Could less shade or more pavement explain the heat? Check imagery before claiming a cause.

DECIDE

Could Site B help more people cool down? Check its bus access and flood risk next.

COMMON MIX-UP

A map does not explain itself. First describe what you see. Then use evidence to explain why it matters.

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STOP: DO THE SIMULATION

Start with people and choices

Open Geographic Data Detective and complete:

Complete Census Budget Challenge and Best Business Location. Each lab has 10 rounds.

Reflection: How did the purpose of the decision change which data mattered most?

What kinds of data do geographers use?

A late bus, a crowded school, a canceled game: geographic data can help explain what happened and what to do next.

CENSUS DATA

Your school is packed. Is your neighborhood gaining families with children? Population and age counts help decide where to add classrooms.

SATELLITE IMAGERY

The empty lot became a huge parking lot. Compare images from two dates: where did trees disappear, and who lost shade?

TRANSIT AND TRAVEL TIME

Practice ends at 5. The last bus leaves at 4:50. Routes AND schedules explain why some students cannot join the team.

ENVIRONMENTAL DATA

Outdoor practice during a heat alert? Temperature and air-quality data help decide when and where it is safer to exercise.

FIELD OBSERVATIONS

Your app says the stop is accessible. You arrive and find stairs. A site visit can reveal barriers a database missed.

COMMUNITY INPUT

A teen survey asks why the new park is empty. Students say the lights go off early. Listening helps explain the mapped pattern.

Notebook: Pick one example. Name the data, the decision, and one missing clue.

Who uses geographic data?

Individuals, businesses, organizations, and governments all use place-based information - but not always for the same purpose.



INDIVIDUAL

Can my family reach the center safely?

BUSINESS

Where are customers and workers?

ORGANIZATION

Which neighborhood has the greatest unmet need?

GOVERNMENT

Which site balances access, safety, cost, and fairness?

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STOP: DO THE SIMULATION

Read visible patterns

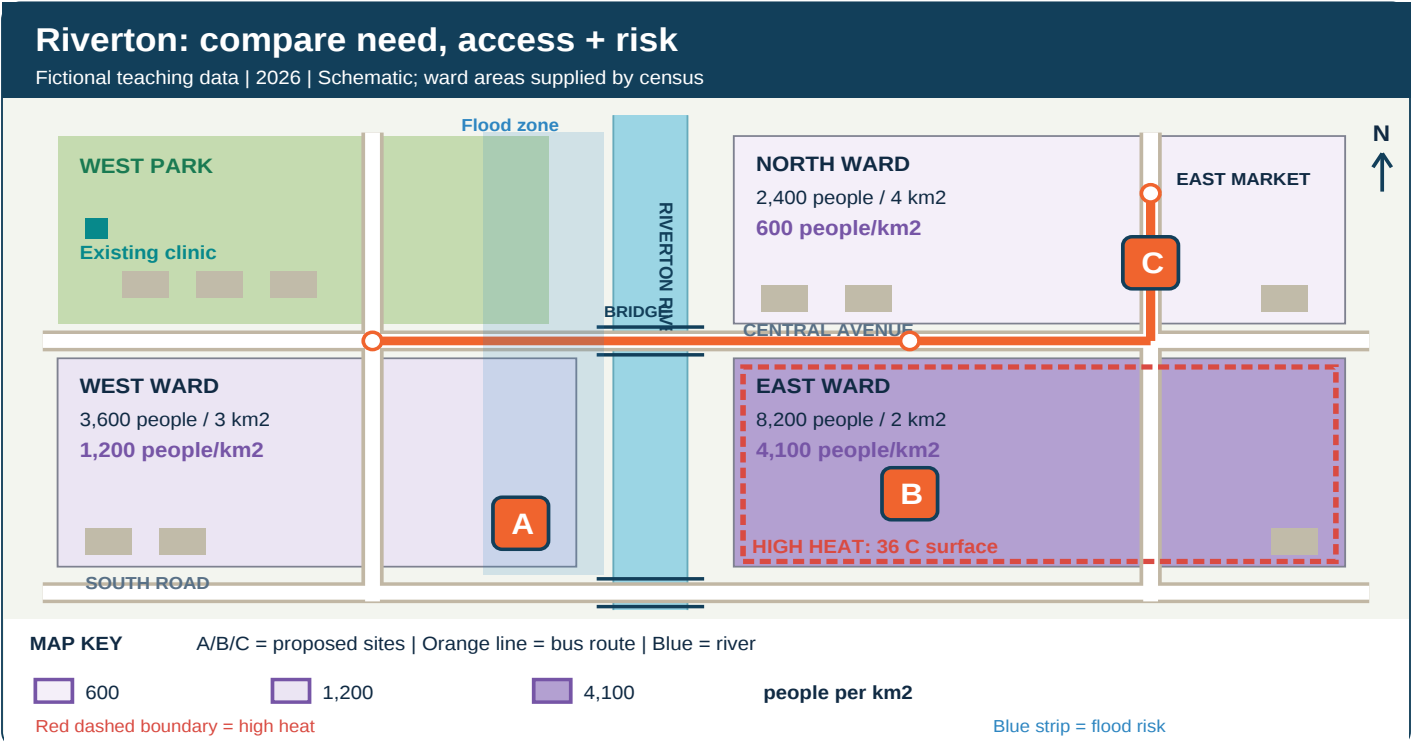
Open Geographic Data Detective and complete:

Complete Satellite Change Detective and Outbreak Pattern Investigator. Each lab has 10 rounds.

Reflection: What could you observe directly, and what still required interpretation?

The best site depends on the question.

A site can look excellent on one layer and weak on another. Compare before you recommend.



Site	Need	Transit	Service gap	Flood risk
A	medium	good	low	HIGH
B	HIGH	good	HIGH	low
C	low	excellent	medium	low

DATA DETECTIVE

Site B is not perfect. It is the strongest balance: high need, useful transit, far from existing services, and low flood risk.

Scale controls what becomes visible.

Scale is the level of detail or area being studied. The right scale depends on the decision.

REGIONAL SCALE

Shows broad patterns across many cities. Useful for comparing heat or health needs between counties.

CITY SCALE

Shows neighborhoods, services, transit corridors, and general risk. Useful for choosing candidate areas.

BLOCK SCALE

Shows crossings, sidewalks, shade, entrances, and barriers. Useful for checking accessibility.

THE GYM IS RIGHT THERE!

Your gym is 300 meters away across a river. The nearest bridge makes the walk 2.4 km - about 30 minutes. Another gym is 1 km away on your side and takes 12 minutes. The second gym is farther in a straight line but easier to reach. Which would you choose after school?

ABSOLUTE DISTANCE

Measured in units: 2 kilometers or 1.2 miles.

RELATIVE DISTANCE

Experienced as time, cost, effort, or difficulty: 35 minutes by bus.

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STOP: DO THE SIMULATION

Change the lens

Open Geographic Data Detective and complete:

Complete Transit Line Designer, Location Data Privacy Lab, and Same Data, Different Decision.

Reflection: How did scale, purpose, or privacy change the best choice?

A recommendation needs more than a favorite.

Use a simple structure: claim + evidence + reasoning.

1. CLAIM

I recommend Site B for the new cooling and community health center.

2. EVIDENCE

The maps show high population and heat exposure nearby, strong bus access, a large gap between existing clinics, and low flood risk.

3. REASONING

These layers matter because the center should reach many people who face heat risk, remain accessible without a car, fill an unmet service need, and stay usable during floods.

TRY THIS

Write one counterargument: A reason another site might still be considered. Then explain why your evidence is stronger.

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STOP: DO THE SIMULATION

Make high-stakes decisions

Open Geographic Data Detective and complete:

Complete Emergency Evacuation Command, Power Restoration Priority, and Cell Tower Coverage Challenge.

Bring back one decision where two useful goals competed.

THE POINT

Data helps people decide. It does not decide for them.

A geographic decision is an evidence-based judgment made by people.

Maps are just for finding places.

Maps also reveal patterns, relationships, access, and risk.

Only governments use geographic data.

Individuals, businesses, organizations, and governments all use it.

One map is enough.

Each layer shows part of the story. Compare relevant sources.

Satellite images equal census data.

Imagery shows visible surfaces; census data describes people and households.

Data automatically gives the answer.

People choose what to collect, how to map it, and how to interpret it.

Can you think like a geographer?

Use evidence from at least two Learning Lab investigations.

PROMPT

Explain how two different kinds of geographic or geospatial data can guide real-world decisions. Describe one mapped pattern and explain how scale, purpose, or stakeholder needs could change the decision.

Your response:

SELF-CHECK

Did I identify two data types? Describe a spatial pattern? Explain how the evidence supports the decision? Use the word scale or name a stakeholder?