

Thinking Geographically

AP Human Geography ■ Unit 1

AP Human Geography



Where, why there, and what evidence?

A planning question

A district needs flood-warning outreach. Is a high-risk map enough, or do we also need to know where people live and how they can travel?

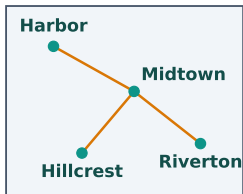
Read the variable, units, geographic extent and level of grouping before drawing a conclusion.

1

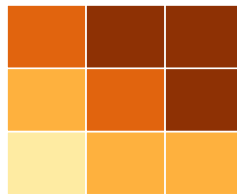
Introduction to Maps

Reference and thematic maps

Reference map
(shows locations and features)



Thematic map
(illustrative relative density)



low high

Original schematics; density colours are illustrative.

These are original schematic examples. The colours illustrate relative density, not measured population values.

Choose a map for the question

Reference map 参考地图

To find a road or locate a settlement, use a map of locations and features.

Thematic map 专题地图

To compare a variable across space, use a thematic map. Read its legend and units.

A map selects information for a purpose. A photograph alone is not a thematic population map.

Projection: purpose and trade-off

Mercator projection 墨卡托投影

Preserves local angles and draws constant-bearing routes as straight lines, useful in navigation.

Area and distance

High-latitude areas are greatly enlarged. Distances are not uniformly preserved, and a straight route need not be shortest.

No flat projection preserves every spatial relationship. Choose for the question being asked.

Your turn: evaluate a projection

Original practice — attempt before the check

A student compares country areas using their apparent sizes on a world Mercator map. Explain a limitation and state what property a suitable alternative should preserve.

Check: the map's purpose matters

- 1 Mercator enlarges high-latitude areas, so apparent size is not a reliable comparison of actual country area.
- 2 An equal-area projection would preserve relative area for that purpose.
- 3 The alternative still has trade-offs; preserving area does not preserve every shape or distance.

Projection qualifications: USGS. Explain the property relevant to the task rather than saying every map distorts everything in the same way.

2

Geographic Data

A photograph is evidence with limits



What can you observe?

The photograph shows a dense urban built environment and movement in a public space. It does not supply a population count, area denominator or census date.

Photo: Shibuya Crossing, Dick Thomas Johnson, CC BY 2.0. Visual evidence is not a substitute for the missing measurements.

Numbers and descriptions

Quantitative 定量

Population counts, areas and travel times have numerical values and units.

Qualitative 定性

Interviews, field descriptions and accounts can show how people experience a place.

Both can be tied to location. Ask how each was collected and what it can answer.

Match the technology to the operation

Technology

GIS 地理信息系统

GPS 全球定位系统

**Remote
sensing** 遥感

What it can do

Combine population, roads and hazard layers

Estimate a field location from satellite signals

Collect imagery from satellites or aircraft

GPS accuracy depends on signal and receiver conditions. A mapped estimate is not automatically exact.

3

The Power of Geographic Data

Complete planning dataset

Block	Area (ha)	Population	Flood risk
A	10	200	Low
B	10	800	High
C	10	1000	Low
D	10	0	High

Fictional blocks and values. Risk classes are supplied planning categories, not measured probabilities.

Your turn: prioritise outreach

Original practice — attempt before the check

Use population and flood-risk class together to choose an outreach priority. Then identify one additional dataset needed before selecting an evacuation site. Explain why each technology would be useful.

Check: compare layers, then identify a gap

Priority on supplied criteria

B has a high-risk class and 800 residents. D also has high risk but no residents in the supplied table. B is the stronger outreach priority.

Further evidence

Road access, route safety and site capacity are needed to select an evacuation site. The table alone cannot establish a safe site.

GIS compares layers; GPS records field locations; remote sensing supplies imagery of conditions.

Data quality affects the decision

- 1 Check the source, collection date and coverage. Missing residents or outdated roads can alter a priority.
- 2 Check categories and units. A risk class is not a population count or a probability unless defined that way.
- 3 Check privacy and aggregation. Household-level information and district summaries support different decisions.

Choices affect interpretation, but that does not make all observations equally unreliable.

4

Spatial Concepts

Describe location precisely

Absolute location 绝对位置

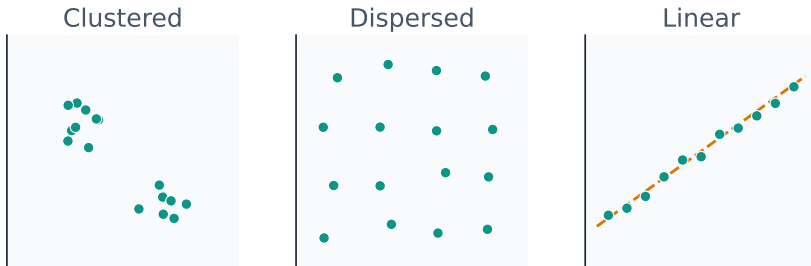
A coordinate or address identifies a place within a reference system.

Relative location 相对位置

“North of the river” or “near the station” relates a place to other features.

Space concerns arrangement and relationships; place also includes characteristics and meanings.

Read a pattern before explaining it



Describe arrangement; investigate causes separately.

Clustered, dispersed and linear are descriptions of arrangement. A pattern alone does not establish its cause.

Distance can be measured differently

Absolute distance

A trip covers 20 km along the same route before and after a new service.

Relative distance

The trip takes 40 minutes before the service and 20 minutes after it. Travel time halves.

This original example illustrates space–time compression: improved connection changes experienced distance, not the route's kilometres.

Your turn: explain a flow

Original practice — attempt before the check

In the fictional 20 km travel example, what changes and what stays the same? Explain how the service could affect interaction, and state one reason the benefit might vary between people.

Check: distance and interaction

- 1 Absolute distance remains 20 km; travel time falls from 40 to 20 minutes.
- 2 Lower travel time could make journeys easier, increasing interaction for people who can use the service.
- 3 Cost, route access and service schedules may limit the benefit. Faster travel does not prove equal access.

Distance decay 距离衰减

A general tendency

Interaction often declines as distance or travel cost increases, other factors being equal.

Why a case may differ

A transport link, barrier or specialised destination can change the relationship. A distant connected place may attract more travel than a nearby inaccessible one.

Use the concept when evidence supports it; do not attach it automatically to every flow answer.

5

Human-Environmental Interaction

The cultural landscape provides evidence



Land use and choices

Housing and roads show human modification of land. The image alone does not show every planning decision, environmental effect or resident's motive.

Photo: Blacklick, Ohio, Pi.1415926535, CC BY-SA 4.0. Describe visible evidence before explaining a process.

Two theories, different claims

Environmental determinism 环境决定论

Claims that the physical environment determines cultural development. The course traces a move away from this account.

Possibilism 可能论

Environmental constraints and opportunities interact with technology, culture and social choices. Resources and power also shape the options.

The environment matters without mechanically determining one cultural outcome.

Your turn: explain a response

Original practice — attempt before the check

A fictional settlement faces water scarcity. Some residents can invest in water-saving technology while others cannot. Explain this through possibilism and identify a sustainability question.

Check: constraints and unequal options

Possibilist explanation

Scarcity constrains activity, but technology and decisions influence responses. Unequal resources limit who can choose each option.

Sustainability

Ask whether water use can meet needs over time without exhausting the resource or shifting costs to others.

A cultural landscape is the visible result of interaction; sustainability requires evidence about resources and effects.

6

Scales of Analysis

Levels are not a single fixed ladder



Illustrative nesting, not a universal hierarchy.

This is one possible arrangement. A region may cross national borders or lie within one country.

Analysis scale and map scale

Scale of analysis

Global, regional, national and local describe levels of observation or grouping.

Map scale ratio

A ratio relates a map length to a ground length. Enlarging a map image alone does not create finer data.

Changing geographic extent and changing the level of grouping are distinct operations.

Your turn: density and distribution

Original practice — attempt before the check

Use the block table: calculate district density and each block's density. Explain what the district average conceals. All four blocks have area 10 ha.

Check: district and block densities

Density = population / area

$D = P/A$. District: $D = 2000/40 = 50$ people/ha.

- | | |
|---|-------------------------------|
| A | $D = 200/10 = 20$ people/ha |
| B | $D = 800/10 = 80$ people/ha |
| C | $D = 1000/10 = 100$ people/ha |
| D | $D = 0/10 = 0$ people/ha |

Density is a rate. Distribution concerns where people are located; the district average does not describe every block.

Your turn: aggregation

Original practice — attempt before the check

Combine A+B and C+D. Calculate each grouped density. Explain which local difference disappears and why this does not mean the original observations changed.

Check: equal grouped rates, different local patterns

Two grouped calculations

A+B: $D = (200 + 800)/(10 + 10) = 50$ people/ha.

C+D: $D = (1000 + 0)/(10 + 10) = 50$ people/ha.

Both groups average 50, but C+D combines the most populated block and an empty block. Aggregation can conceal variation.

Your turn: explain two limits

Original practice — attempt before the check

A map reports only this district's total. Explain why it cannot establish every block's density or represent every district in the country.

Check: grouping and geographic extent

Within the district

Aggregation hides block differences:
density ranges from 0 to 100
people/ha.

Beyond the district

The study covers one district.
Other districts may have different
patterns.

A limitation needs a reason tied to the supplied evidence. This is original practice, not an authenticated exam extract.

7

Regional Analysis

Define the criterion before drawing the boundary

Type	Original teaching example
Formal (uniform)	An area defined by at least 50% wheat-growing land
Functional (nodal)	A shop's delivery zone connected to its service node
Perceptual (vernacular)	Residents' differing ideas about "the coast"

The formal threshold does not require every farm to grow wheat. One area can be analysed using more than one definition.

Your turn: classify with a reason

Original practice — attempt before the check

Classify each example on the preceding page. Explain which criterion supports the label and why the boundaries may differ between definitions.

Check: justify the regional definition

- 1 Formal: a stated measurable land-use threshold defines the area.
- 2 Functional: activity connects locations to the shop as a node.
- 3 Perceptual: beliefs and meanings define the area; respondents may disagree.

Boundaries can be transitional, overlapping or contested. Physical features, laws and networks can still provide evidence for a definition.

Exam tips: make the inference traceable

- 1 Identify the variable, units, legend, extent and level of grouping.
- 2 Describe a pattern using evidence before proposing a mechanism.
- 3 Match the concept to the task, and state what the evidence can and cannot establish.

Sources for this lesson

Course scope

College Board, AP Human Geography Course and Exam Description, topics 1.1–1.7; local PDF pages 37–43.

Projection qualifications: USGS. Position accuracy: GPS.gov. Block values, travel examples and practice prompts are fictional. Photographs retain their original attribution and licences.

Check yourself

- 1 Why is Mercator unsuitable for comparing country areas by apparent size?
- 2 How do GIS, GPS and remote sensing differ?
- 3 What is the difference between distance decay and space–time compression?
- 4 How can equal grouped densities conceal unequal local values?
- 5 Why does a formal region not require every person or farm to share an identical trait?