River Patterns

Compare land and settlement patterns using geographic data.

8.P.2.3.B "Use multiple mapping techniques, data visuals, satellite images, and geographic technology to analyze spatial patterns of physical and human characteristics, making connections between regions."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle each mapping or imaging tool named in the passage, and underline details that link the shape of the land to where people build.

Two Places Along One River

1 Imagine two communities along the same river: Broadbend, on a wide plain, and Stonegap, in a narrow canyon. A satellite image would show roofs, roads, and tree-covered land in each place. A terrain map would show the height and shape of the ground. Neither view alone explains where people build.

2 Researchers divide each community into low and high areas. They use geographic information system (GIS) layers to count buildings in equal one-square-kilometer areas. They also estimate tree cover from satellite images and measure height above the river with a terrain map. The table combines these different views of the same places.

LAND AND BUILDINGS IN TWO COMMUNITIES

Area	Height above river (m)	Buildings per square km	Tree cover (%)
Broadbend low	2	420	12
Broadbend high	25	180	30
Stonegap low	3	90	18
Stonegap high	60	15	65

3 At Broadbend, roads can spread across the wide plain, while Stonegap's steep walls leave less room near the river. Low ground in either community may flood, so a high building count does not mean a place is safe. Comparing the two communities can reveal how land shape and human choices interact, but the table cannot prove why each household chose its location.

2 ANSWER WITH EVIDENCE

Use the passage

1. Compare the low and high areas in both communities. What pattern do you see in the building counts?

2. Broadbend low and Stonegap low are both close to river height. How do their building counts differ, and what land shape described in the passage may help explain the difference?

3. Compare tree cover and building counts in the two high areas. What pattern connects these areas?

4. Why would a satellite image of roofs and trees not be enough to compare the areas' heights above the river? Which tool in the passage provides that information?

3 YOUR TURN

Your own words

Choose one of the four areas as a possible site for a community garden. Explain your choice using at least two facts from the table, then name one map layer you would add to check whether the site works for residents.

ANSWER KEY

River Patterns

GRADE 8 · 8.P.2.3.B

PART 1 · READ AND MARK

Circle each mapping or imaging tool named in the passage, and underline details that link the shape of the land to where people build. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Compare the low and high areas in both communities. What pattern do you see in the building counts?	**In both communities, the low area has more buildings per square kilometer than the high area: 420 versus 180 in Broadbend and 90 versus 15 in Stonegap.**
2	Broadbend low and Stonegap low are both close to river height. How do their building counts differ, and what land shape described in the passage may help explain the difference?	**Broadbend low has 420 buildings per square kilometer, compared with 90 in Stonegap low. Broadbend's wide plain has room for roads and buildings, while Stonegap's steep canyon walls leave less room.**
3	Compare tree cover and building counts in the two high areas. What pattern connects these areas?	**Broadbend high has 30% tree cover and 180 buildings per square kilometer. Stonegap high has more tree cover, 65%, and fewer buildings, 15 per square kilometer.**
4	Why would a satellite image of roofs and trees not be enough to compare the areas' heights above the river? Which tool in the passage provides that information?	**The image shows surface features, not the ground's height above the river. A terrain map provides height information.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would consider Broadbend high for a community garden. Its height of 25 meters above the river may make flooding less likely than in Broadbend low, but the table does not show flood boundaries. Broadbend high also has 180 buildings per square kilometer, so residents may live nearby. I would add a walking-route layer to a GIS map to check whether people could reach the site.

Accept any of the four areas if the student uses two accurate table facts and names a relevant map layer. Students should treat flood risk and access as questions to investigate, not facts proved by the table.