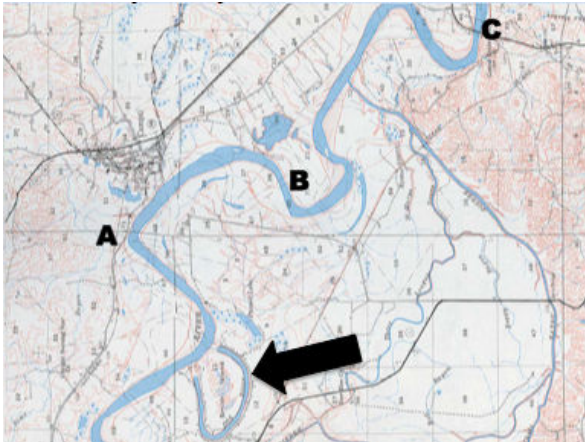


Directions: Answer the following question(s).

- 1 You have recently won the lottery and want to buy a sweet home on a river. Below is a map and some information about three possible houses on the river you desire. The water flows from the bottom of the map to the top.



	Home A	Home B	Home C
Geology Beneath	Loose sediments	Solid sandstone	Solid Granite Rock
Average sediment size along river bank	1.2 mm	1.8 mm	None (solid rock)
Stream speed	2.9 m/s	2.0 m/s	1.4 m/s
Height above the water level	9 m	4 m	55 m

State which house is safer to purchase, and explain 2 reasons why. (3 points).

Master ID: 2255038 Revision: 1

Rubric: 3 Point(s)

How to earn 3 points

- 3 Chooses Home C (1)  
AND two of the following:  
Says less erosion will occur because it's a consolidated material (1)  
Less erosion due to smaller stream velocity (1)  
Has a higher height, so it's less likely to flood (1)
- 2 Missing only 1 of the following

- Chooses Home C (1)  
AND two of the following:  
Says less erosion will occur because it's a consolidated material (1)  
Less erosion due to smaller stream velocity (1)  
Has a higher height, so it's less likely to flood (1)
- 1 Missing any 2 of the following

- Chooses Home C (1)  
AND two of the following:  
Says less erosion will occur because it's a consolidated material (1)  
Less erosion due to smaller stream velocity (1)  
Has a higher height, so it's less likely to flood (1)
- 0 has none of the following

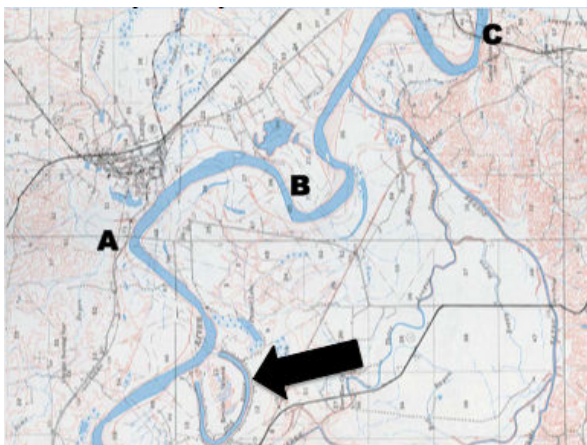
- Chooses Home C (1)  
Says less erosion will occur because it's a consolidated material (1)  
Less erosion due to smaller stream velocity (1)  
Has a higher height, so it's less likely to flood (1)

Standards:

ACS.SCI.8.ESS.1.3.a

Directions: Answer the following question(s).

- 2 Which house is more likely to get cut off from the land and end up on an island?



	Home A	Home B	Home C
Geology Beneath	Loose sediments	Solid sandstone	Solid Granite Rock
Average sediment size along river bank	1.2 mm	1.8 mm	None (solid rock)
Stream speed	2.9 m/s	2.0 m/s	1.4 m/s
Height above the water level	9 m	4 m	55 m

- A. A  
B. B  
C. C  
D. All three are equally vulnerable

Master ID: 2255039 Revision: 1

Correct:

Rubric: 1 Point(s)

How to earn 3 points

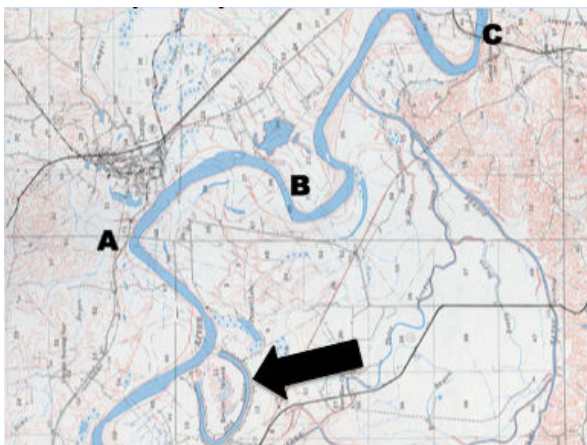
- 1 Responses: B  
This one is inside a meander and when weathering and erosion create a channel cutoff, the island will not be connected to land.
- 0 Disqualifier: A,C,D

Standards:

ACS.SCI.8.ESS.1.3.a

Directions: Answer the following question(s).

- 3 Which house is more likely to have erosion cause it fall into the river?



	Home A	Home B	Home C
Geology Beneath	Loose sediments	Solid sandstone	Solid Granite Rock
Average sediment size along river bank	1.2 mm	1.8 mm	None (solid rock)
Stream speed	2.9 m/s	2.0 m/s	1.4 m/s
Height above the water level	9 m	4 m	55 m

- A. A  
B. B  
C. C  
D. All three are equally vulnerable

Master ID: 2255040 Revision: 1

Correct:

Rubric: 1 Point(s)

How to earn 3 points

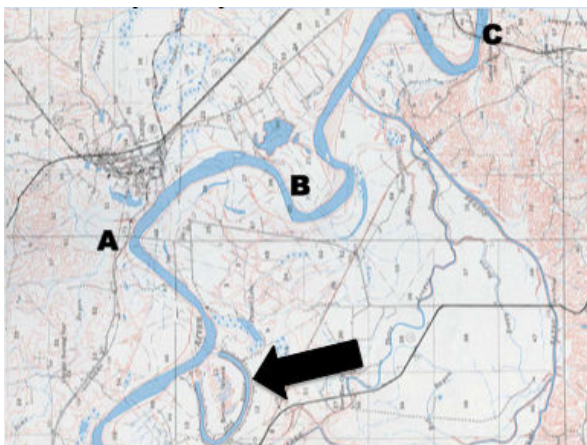
- 1 Responses: A  
This one is on the outside of a meander where weathering is happening more and erosion is carrying the sediments away. This location has a greater stream current, which means more energy to move sediments and cause the stream to cut out more.
- 0 Disqualifier: B,C,D

Standards:

ACS.SCI.8.ESS.1.3.a

Directions: Answer the following question(s).

- 4 Which house could gain land because it may have sediments deposited near its property



	Home A	Home B	Home C
Geology Beneath	Loose sediments	Solid sandstone	Solid Granite Rock
Average sediment size along river bank	1.2 mm	1.8 mm	None (solid rock)
Stream speed	2.9 m/s	2.0 m/s	1.4 m/s
Height above the water level	9 m	4 m	55 m

- A. A  
B. B  
C. C  
D. All three are equally vulnerable

Master ID: 2255041 Revision: 1

Correct:

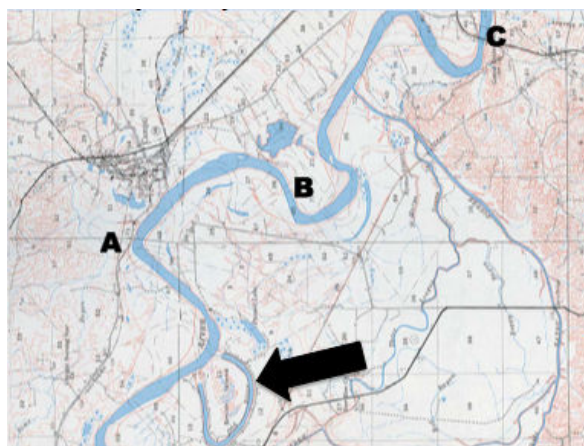
Rubric: 1 Point(s)

- 1 Responses: B  
Since house B is on a point bar, the water current is less in the area near the point bar, which promotes deposition. This also means that more "land" will be created.
- 0 Disqualifier: A,C,D

Standards:

ACS.SCI.8.ESS.1.3.a

5



The dominant process(es) near house A would be

- A. Weathering  
B. Erosion  
C. Deposition  
D. Weathering and erosion

Master ID: 2255042 Revision: 1

Correct:

Rubric: 2 Point(s)

How to earn 3 points

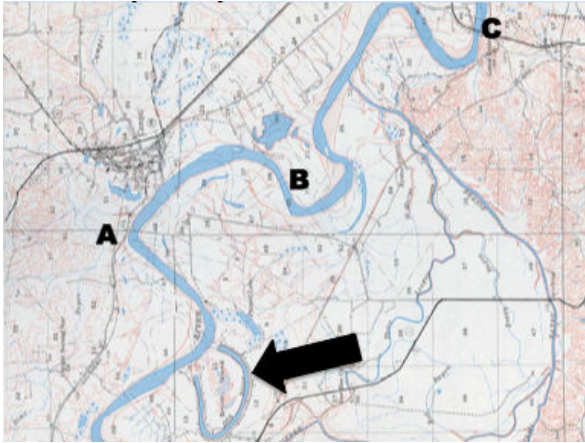
- 2 Responses: D  
Both weathering and erosion act here as water cuts into the stream bank
- 1 Responses: AB  
Weathering and erosion act here, so choosing one gets one point
- 0 Disqualifier: C

Standards:

ACS.SCI.8.ESS.1.3.a

Directions: Answer the following question(s).

6 Which house probably more likely to be flooded?



	Home A	Home B	Home C
Geology Beneath	Loose sediments	Solid sandstone	Solid Granite Rock
Average sediment size along river bank	1.2 mm	1.8 mm	None (solid rock)
Stream speed	2.9 m/s	2.0 m/s	1.4 m/s
Height above the water level	9 m	4 m	55 m

- A. A
- B. B
- C. C
- D. All three are equally vulnerable

Master ID: 2255043 Revision: 1

Correct:

Rubric: 1 Point(s)

- 1 Responses: B  
House B is lower, and closer to the water, so when water level rises, it will be the more likely candidate to get flooded.
- 0 Disqualifier: A,C,D

Standards:

ACS.SCI.8.ESS.1.3.a

7 When rivers carry materials downstream in the current, this is an example of

- A. Erosion
- B. Weathering
- C. Deposition

Master ID: 2255062 Revision: 1

Correct:

A

Standards:

ACS.SCI.8.ESS.1.3.a

8 When rivers sediments scrape against other materials and break them down (abrasion) this is an example of

- A. Erosion
- B. Weathering
- C. Deposition

Master ID: 2255063 Revision: 1

Correct:

B

Standards:

ACS.SCI.8.ESS.1.3.a

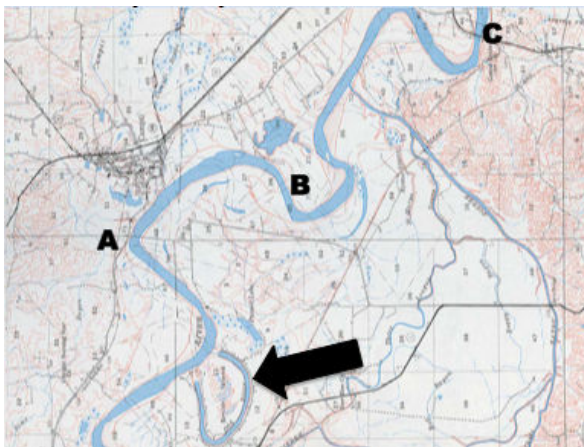


Directions: Answer the following question(s).

- 9 Which location in a river would likely have deposition?
- A. The beginning of a river, because water is faster.
  - B. The end of a river, because it's slower.
  - C. The flat parts of a river, because water is slower
  - D. The steep parts of a river, because water is faster

Master ID: 2255064 Revision: 1  
Correct:  
Rubric: 2 Point(s)  
2 Responses: C  
1 Responses: B  
0 Disqualifier: A,D  
Standards:  
ACS.SCI.8.ESS.1.3.a

10



The arrow in the picture is pointing to a(n)

- A. Oxbow Lake
- B. Drumlin
- C. meander
- D. floodplain

Master ID: 2255067 Revision: 1  
Correct: A  
Standards:  
ACS.SCI.8.ESS.1.3.a

- 11 Erosion on a meander usually occurs on the \_\_\_\_\_ of a curve because water speed is faster there.

- A. Outside
- B. Inside

Master ID: 2255068 Revision: 1  
Correct: A  
Standards:  
ACS.SCI.8.ESS.1.3.a

- 12 Deeper, slower water usually results in

- A. Erosion
- B. Weathering
- C. Deposition

Master ID: 2255069 Revision: 1  
Correct: C  
Standards:  
ACS.SCI.8.ESS.1.3.a