ReCoast

Glass Recycling to Restore the Coast

Julie Albert

Katie Russell

Kat Fogg

Chemical and Biomolecular Engineering

Did you know that WATER contains ENERGY?

This ENERGY is how water can pick up and carry pieces of matter as it flows.

Faster moving water has MORE ENERGY and can carry LARGER SEDIMENT than slower moving water.

As flowing water slows down, any sediment that it can no longer carry is left behind.

Let's setup a model for land and rain!

1. Carefully observe your teacher's demonstration model.
2. Spoon the sand from your large cup into your river model and pack into a uniform layer between point A & B.
3. Place the rainmaker at the top of your model.
4. Add 2 mini cups of water.
5. Carefully observe what happens.

Observations

- Did you see sediment movement?
- What happened at the top of your model?
- What happened within your catch basin?

https://i0.wp.com/skytruth.org/wp-content/uploads/2014/06/Mississippi-Runoff-into-the-Gulf.jpg?zoom=2&resize=180%2C180&ssl=1

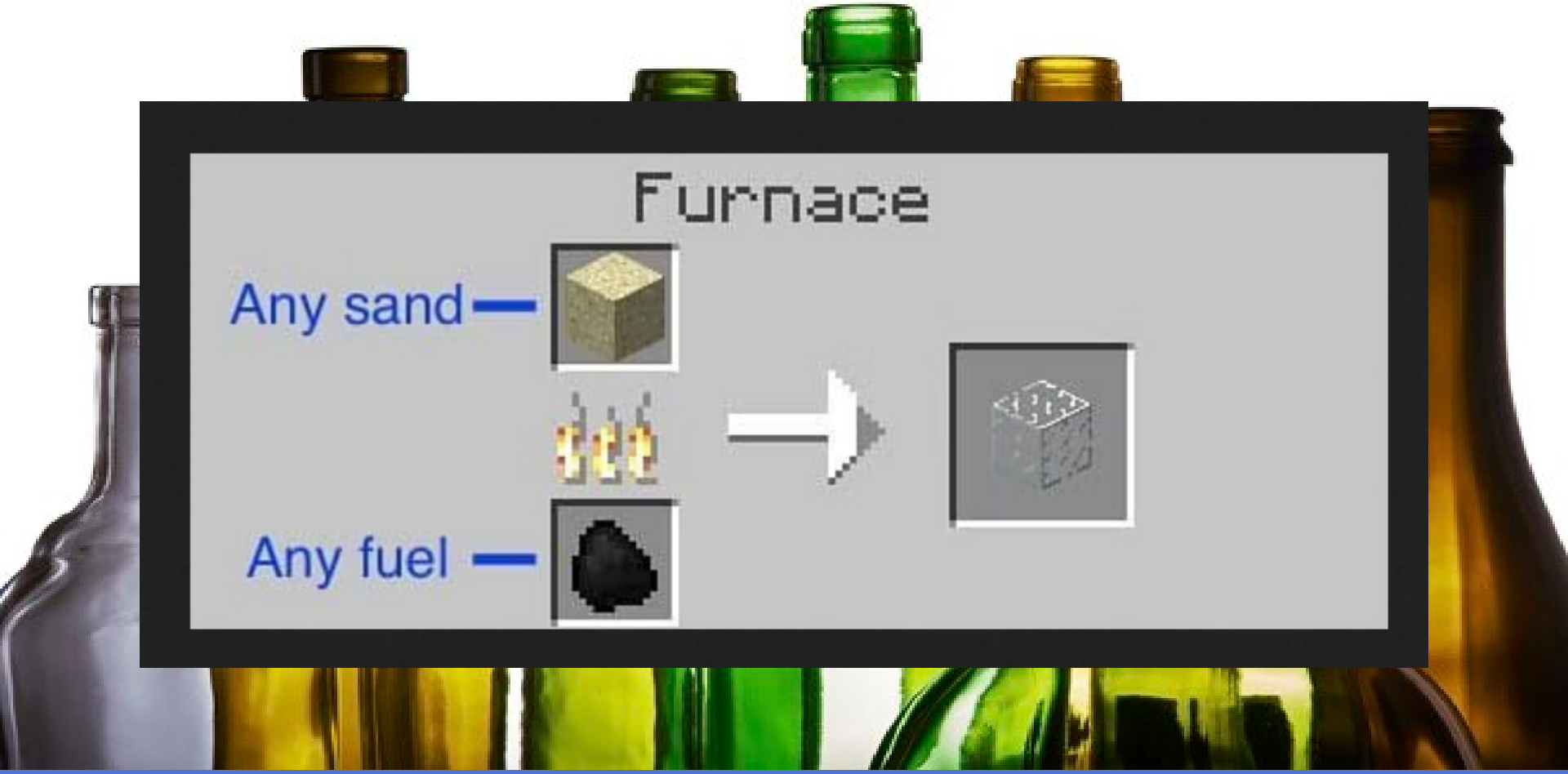
When sediment is removed and not replaced, it causes EROSION.

https://d1l18ops95qbzp.cloudfront.net/wp-content/2022/03/01110908/collapsed-house-rocky-point-beach.jpg

https://s.yimg.com/ny/api/res/1.2/AKfVGaJF05v4d1hBujqiwA--/YXBwaWQ9aGlnaGxhbmRlcjt3PTk2MDtoPTY0MA--/https://s.yimg.com/os/creatr-uploaded-images/2023-02/879a0300-b680-11ed-b7f6-d583ce35146e

LOUISIANA LOSES A football field OF LAND EVERY hour.

https://media.npr.org/assets/img/2013/07/24/louisiana-coast_wide-52001451c2495ddbe4345939868753af80b12dff.jpg


Furnace
Any sand
Any fuel

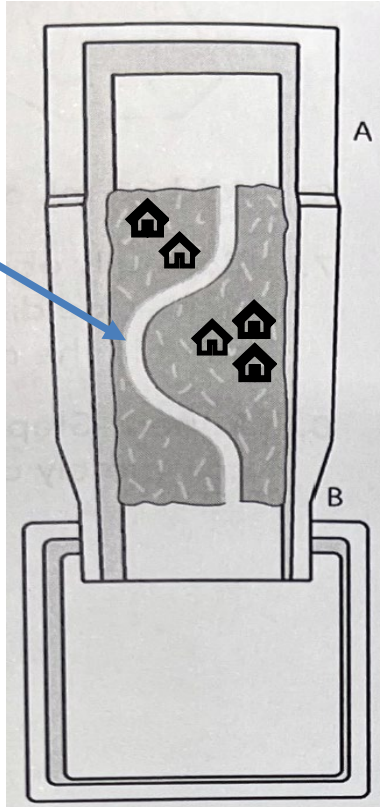
New York Times/Eyevine

Your Engineering Challenge!

Design and test a structure to reduce erosion

Let's setup a model of a natural stream!

1. Spoon the sand from your large cup into your river model and pack into a uniform layer between point A & B.
2. Press the channel maker into the sand to form a stream!
3. Add red and green houses to the land around your stream.
4. Place the rainmaker at the top of your model.
5. Add 2 mini cups of water.
6. Carefully observe what happens.



Observations

- Did you observe any erosion?
- What happened to the houses?
- How could we better protect the houses?

Erosion-control!

Levees

Marshland

Recycled Glass Sand

Now it's your turn to test erosion-control structures!

1. Spoon the sand from your large cup into your river model and pack into a uniform layer between point A & B.
2. Press the channel maker into the sand to form a stream.
3. Add erosion-control structures.
4. Place the rainmaker at the top of your model.
5. Add 2 mini cups of water.
6. Carefully observe what happens.

Levees:
Legos

Marshland:
Yellow Mesh

Recycled Glass Sand:
Tumbled Glass

Observations

- Did you observe any erosion?
- How was it different from the natural stream?
- What would you do differently?

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