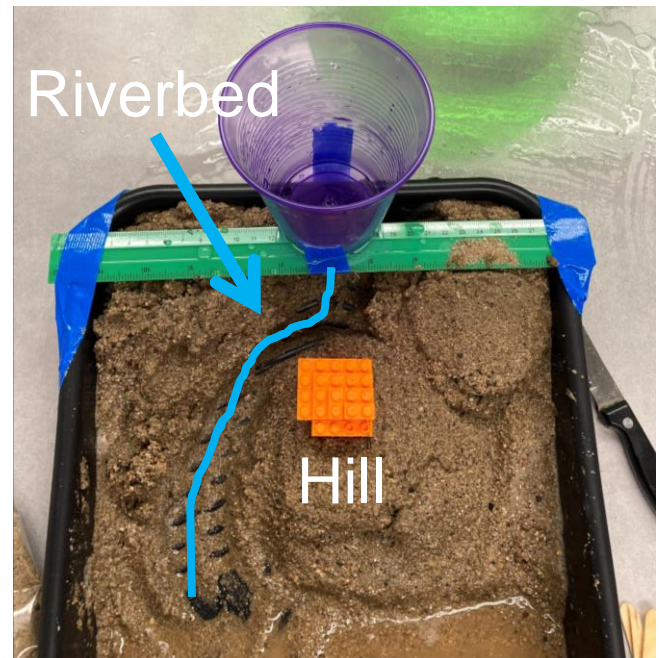


Civil Engineers: House on the Hill Flood Protection

Engineering Design Challenge: protect the house by engineering a way to keep hillside from eroding

House on the Hill Setup

1. Form a small hill directly in line with the rain cup water stream.
2. Put your house or houses on top of the hill.
3. Form a riverbed which leads from the rain cup straight down toward the house on the hill and then around the hill.
4. It helps to push sand up underneath the ruler to support it on either side of the rain cup.
5. Using the rain cup with the largest hole (the flood rain cup), make it rain and flood the system for 2 minutes.
6. Make observations about how it floods and what happens.



Engineering Flood Protection

1. Reform your hillside and replace the house on the hill.
2. Using your IDEAS Engineering Notebook, draw your first original flood control design idea on the front cover. Be sure to label all the parts.
3. Build your first flood protection design and put it into place.
4. Using the flood rain cup, make it rain and flood the system for 2 minutes.
5. Make observations about how your design worked or did not work to protect the hillside and house.
6. On page 1 in the IDEAS Engineering Journal, brainstorm a modification you can make to your design.
7. Decide on a modification to your design. Draw it. Label it. Describe it. Test it. Describe how it performed. Decide to Keep or Kick the modification.
8. Repeat step 7 four times as you keep working through your IDEAS Engineering Journal.
9. Be prepared to share what you tried and what you think worked the best the next time we meet!

