

1. Flooding 5E Lesson

2. Subject area / course / grade level: Science / 4th Grade

3. Materials List: large flat container or tray with sides
Sufficient amount of modeling clay to cover the bottom of the pan
Water, sponges, drawing paper, and pencils

4. Overarching TEKS, [ELPS](#), [CCRS](#), and Global Graduate/other district standards (chart or list).

<i>TEK</i>	<i>CCRS</i>	<i>ELPS</i>	<i>Other</i>
	<i>Integrate and organize material effectively</i>	<i>Listening</i>	<i>Critical Thinking</i>
<i>ELAR: 7 Use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.</i>	<i>Participate actively, effectively, and respectfully in one-on-one oral communication as well as in group discussions.</i>	<i>Speaking</i>	<i>Skilled communicators</i>

5. Lesson Objective/Summary: Students will learn what causes floods to occur, and how they can keep their family members and themselves safe. Students will learn the saying, “Turn Around Don’t Drown” (TADD), and develop a safety plan through this lesson plan. Students will develop a 3-step safety plan, so they know how to react before, during and after a flood. Developing a 3-step plan is key to surviving a flood. The primary emphasis of this lesson will be understanding what goes into a safety plan.

6. Differentiation Opportunities:

TSW takes a look at the maps. Consider looking over these maps from [Bayou Preservation Association](#) of the 22 bayou systems and waterways in the greater Houston region. Most of these watersheds are located within Harris County and extend to Spring Creek, Clear Creek, and Cedar Bayou, plus Lake Houston.

7. Community-Based Resources:

Find a speaker from [NEPRIS](#).

8. Engage:

Warm-up What causes floods? Have you ever experienced a flood?

9. Explore:

Divide class into several groups and have students build a terrain without levees, pour water through it, and observe the effects caused by water rushing through the riverbanks and across plains. Have students predict what will happen if they add the levees to the model.

10. Explain:

The first model will show what would happen without any human interference in the banks of the river. When flooding conditions occur, the entire floodplain is covered with water. However, when the banks of the river are artificially shored up- as with the second model- conditions change. Under non flood conditions the water remains within its banks but when more water is added into the system, water will back up in all places except where the artificially high walls are too low, causing floods.

10. Explanation:

NEPRIS speaker will perform zoom call and students will come up with different questions about flooding.

11. Elaboration:

<https://www.youtube.com/watch?v=4PXj7bOD7IY&t=4s>

Students will watch the following video and make connections with flooding that has happened in Houston.

12. Evaluation:

Talking point-Answer the questions below in pairs or small groups. 1. What can be done to stop flooding in areas like Houston in the future? 2. Do you think that the city of Houston should be evacuated? Why/why not? 3. Do you think that the floods in Texas are a natural event or do you think that humans have made them worse? Why/why not?

https://www.pbs.org/wgbh/nova/teachers/activities/pdf/2307_flood.pdf