TABLE 1

Guiding questions based on the 5E model.

5E Phases: Activity	Guiding Questions for Students
Engage: KWL	• What do you know about flood prevention? • What are some strategies you have learned about preventing floods? • What structures do you know that help prevent floods? • What happens when the water levels increase? • Why is it important to prevent flooding? • Who prevents flooding? • What do you want to know about flooding? • What do you need to know to prevent flooding? • What did you learn about flooding?
Explore: Sea Rise Simulation	• What happens when you increase the water level? • Why do you suppose your area flooded so quickly compared to other areas? • What patterns did you notice about high levels of water in your area? • If you could prevent the flooding in your area, how would you do it?
Explain: Class Discussion	• Based on the simulator and the video, what happens during flooding? • Based on the simulator and the video, what causes flooding? — What is the cause of flooding in your area? What is your reason for saying that? — Can you think of other causes of flooding?
Elaborate: Engineering Challenge	• What is engineering? • What kind of engineer works to prevent flooding? • How do engineers work? • What is the goal of building a prevention model? • What strategy are you using to prevent your model from flooding? • What materials will help to prevent flooding? — Which materials will make it waterproof? • How much will my design cost? • Did your model flood? — Why do you think your design didn't work? • Do you think your model can withstand a larger rain/flooding event? How much more water could it withstand? • How can you improve your design?
Evaluate: Presentations	• What was the goal of designing a prevention model? • How did you reach the goal? — Which materials did you use to prevent flooding? Why? — Please explain how your prevention system works to prevent flooding. • How did your design work for your clients? — If it did not work, why do you think it didn't work? What was the problem? • What did you learn from this project?