Lesson Title: The Watershed Populations

Teacher/Collab Teacher	Maria Brewer	**Course/Grade**	STEM- 7th / 8th	**Date of Lesson**		**Block**	
Specific SOL	MS-ESS3-2 Earth and Human Activity - Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts.						
Learning Target	I will be able to explain how land use affects the watershed and the populations in it. I will know I'm successful when I have completed the runoff simulation.						
Success Criteria	Completion of the runoff simulation						
Unit & Lesson	Unit: Watershed Solution Project Lesson 4: Watershed Populations						
Essential Questions	How does land use affect the watershed and the populations in it? How does runoff affect the watershed? What species are impacted by the health of the streams?						
Today's Reading and/or Writing Strategy(ies) (specific to this lesson)	Graphic organizers, Sentence frames, Read aloud			**English Language Development Standard:** **The language of… SCIENCE.**			

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	The Teacher Facilitates	Differentiation Strategies	With Student Engaged Learning
Engage & Hook	Teacher will greet students, take attendance, and monitor students. The teacher will address any misconceptions as they arise and use the essential questions as an opportunity to review/gear up for today's lesson. Teacher reviews learning target with students. Teacher will encourage students to check their results on the information sheet and share their findings.	ESL: Teacher will explicitly explain directions.	Students will share their favorite parts of the field trip and any observations they made. Stream Study Form They will compare their Stream Study Form from the field experience to the Water Quality Parameters Information Sheet and determine if the water is healthy. Water Quality Parameters Information Sheet (noaa.gov)
Explain & Model **WEEK 7-8**	**Review Vocab: Natives, runoff** Teacher prompts questions about the populations they saw on the field trip.	ESL: Teacher will provide Tier 2 vocabulary and images needed for comprehension.	**Notes** Students will fill out a Venn diagram to describe what they observed at the two sites.

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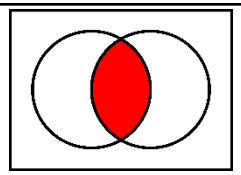
	Natives? Invasives? Quantity of the species found. Teacher will have students fill out a Venn diagram with their observations. Venn Diagram What could have introduced them there? What happened to the natives? How does runoff affect the watershed? Teacher will show Land Use slides to further explain. Land use challenges Slides	  	Types of species/populations, natives, the water chemistry results from both places.
Explore & Apply	Teacher will assign students the online simulation and monitor. Runoff simulation		Students will watch and play with the runoff simulation and complete the questions at the end of each activity. They may work with a partner.
Evaluate & Close	Teacher will move around the room and assist/monitor as necessary.	ESL: Teacher will provide clarification of instructions. Students can provide verbal responses.	Students will complete all 8 activities in the simulation.

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Additional Resources

Land-use Challenges | Sustainability Accelerator (chathamhouse.org)

Lesson 5: Runoff Simulation (concord.org)