

How Can I Use All or Parts of this Marine Sediment exercise in my Class?

From the Instructor Guide to Chapter 2 of St. John, K., Leckie, R.M., Pound, K., Jones, M., and Krissek, L., 2012. *Reconstructing Earth's Climate History: Inquiry-based Exercises for Lab and Class*. Wiley-Blackwell, 485p.

Marine Sediments Exercise	Part 2.1	Part 2.2	Part 2.3	Part 2.4
Title (of each part)	Sediment Predictions	Core Observations & Descriptions	Sediment Composition	Geographic Distribution & Interpretation
How much class time will I need? (per part)	8 min.	40 min.	30 min.	50 min
Can this be done independently (i.e., as homework)?	Yes	No	Yes, after initial directions	No
What content will students be introduced to in this exercise?				
Geographic awareness	X	X	X	X
Marine sediments (distribution & controls on distribution)	X	X	X	X
What types of transportable skills will students practice in this exercise?				
Make observations (describe what you see)		X	X	X
Plot data - map, graph, pictorial form				X
Form questions	X	X		
Interpret graphs, diagrams, photos, tables		X	X	X
Make hypotheses or predictions	X			X
Synthesize/integrate & draw broad conclusions		X		X
Work with diverse perspectives		X		X
Written communication	X	X		X
Make persuasive, well supported arguments		X		X
What general prerequisite knowledge & skills are required?	None	Basic geography; latitude & longitude	None	Basic geography; latitude & longitude
What Anchor Exercises (or Parts of Exercises) should be done prior to this to guide student interpretation & reasoning?	None	Part 2.1 & Intro to Cores (Ch 1) Exercise	Parts 2.1-2.2	Parts 2.1-2.3
What other resources or materials do I need? (e.g., internet access to show on-line video; access to maps, colored pencils)	None	Core photos at end of exercise (can download for higher resolution photos, see instructions in Part 2.2 #1)	None	Physiographic map at end of exercise; Means of projecting map (see suggestions in Part 2.4 #1)
What student misconception does this exercise address?	Sediments are the same throughout the global ocean basin.			

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What forms of data are used in this? (e.g., graphs, tables, photos, maps)	None – general knowledge	Table & photos	Table & photos	Map (& Table from Part 2.3)
What geographic locations are these datasets from?	General ocean	Pacific Ocean and North Atlantic Ocean		
How can I use this exercise to identify my students' prior knowledge (i.e., student misconceptions, commonly held beliefs)?	Part 2.1 of this exercise module is designed as an initial inquiry aimed at drawing out student beliefs and prior knowledge. In addition, Parts 2.2-2.4 often lead with tasks or questions that can further identify student prior knowledge.			
How can I encourage students to reflect on what they have learned in this exercise? [Formative Assessment]	Each exercise part can be concluded by asking: <i>On note card (with or without name) to turn in, answer: What did you find most interesting/helpful in the exercise we did above? Does what we did model scientific practice? If so, how and if not, why not?</i>			
How can I assess student learning after they complete all or part of the exercise? [Summative Assessment]	A detailed answer key and additional suggestions for instructors can be obtained from the lead author: Kristen St. John, stjohnke@jmu.edu.			
Where can I go to for more information on the science in this exercise?	A detailed answer key and additional suggestions for instructors can be obtained from the lead author: Kristen St. John, stjohnke@jmu.edu.			