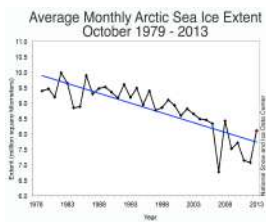
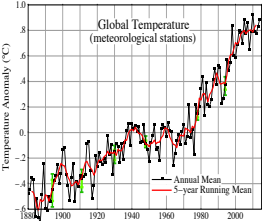


2.1 Finding Patterns Tool for Earth Systems: How are Earth systems changing?

The graphs below show data about changes to Earth systems over time. In each row, write down your ideas about patterns you see in the data set (hint: you should have evidence for this). The final box in each row (in grey) is a place for you to write down ideas about what is causing this pattern (hint: you may not have evidence for this yet).

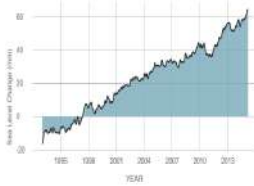
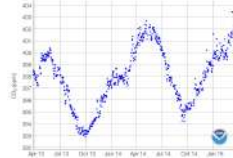
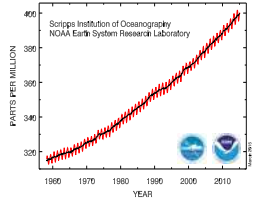
Earth system	Representation	Generalizability (Patterns in space)	Short-term variability (Patterns in time)	Long-term trends (Patterns in time)	Cause and Effect (Unanswered questions)
	1. What variables are represented? 2. What time period is represented?	3. Which of the Earth's regions are included? 4. What does this data tell you about global patterns?	5. Describe the short-term variability in the data. 6. Is it predictable or unpredictable?	7. Describe the long-term trend in the data. 8. Is it predictable or unpredictable?	9. What do you think is the cause of the pattern or trend in the graph?
Arctic Sea Ice 					
Global Temperature 					

Human Energy Systems Unit, Activity 2.1



Carbon TIME

Carbon: Transformations in Matter and Energy
Environmental Literacy Project
Michigan State University

Earth system	Representation	Generalizability (Patterns in space)	Short-term variability (Patterns in time)	Long-term trends (Patterns in time)	Cause and Effect (Unanswered Questions)
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Sea Level 					
Atmospheric CO₂ – Three Year 					
Atmospheric CO₂ – Long Term 					

Your Group's Explanation: How do you think changes in these five Earth systems are related to each other?