

Simple Glacier Model Questions

Module 1: What happens if we have a constant temperature change?

What is the x-axis and x-axis range in each plot?

Graph	x-axis range and units	y-axis range and units
Glacier		
Ocean melt over time		
Length over time		

Describe in your own words, what would cause the change between 50 m/yr, 75 m/y, and 100 m/y ocean melt rate? (hint: look at the table provided).

Describe what happens when you increase the ocean melt from 50 m/yr, 75 m/y, and 100 m/y

Let the model run until it pauses (2x though) and complete the table:

Column 1	2	3	4	5
Ocean Melt	Approximate length (km) at Year 500	Approximate length (km) at Year 1500	Difference between column 3 and 2 (km)	Column 4 divided by time 1000 yr
50 m/yr				
75 m/yr				
100 m/yr				

What is column 4 representing?

Why do you think the change in length of the glacier over time is not constant if ocean heat is constant? (Hint: Look at the bedrock as the glacier is retreating)

Module 2: What happens if we change the temperature over time?

What is the x-axis and x-axis range in each plot?

Graph	x-axis range and units	y-axis range and units
Glacier		
Ocean melt over time		
Length over time		

Explain in your own words what is happening to the glacier as the ocean melt rate changes

What is the approximate difference in length between Year 0 and Year 990 (include units).

Watch carefully when the glacier **first** starts to advance each cycle. Watch carefully when the glacier **first** starts to retreat each cycle. What does the **rate** of advance look like compared to the **rate** of retreat? (You do not need to calculate the rate- just describe it)

What do you think is causing the difference in rates?
