Biopolymers: Building Blocks of Life Worksheet

Building Polymers Activity: Data Tables

Activity 1 Data Table: Building Straight-Chain Polymers Chain Length Data Value Unit Average (mean) Monomers/chain Minimum Monomers Maximum Monomers Median Monomers Calculate the mean by this formula, Monomers <i>Mean</i> = Total number of monomers in all chains Number of chains Activity 2 Data Table: Building 2-D Polymers with Bends Number of Chains 0 bends 1 bend 2 bends 3 bends >3 bends Dimer (2-long) Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Pentamer (6-long) Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Pentamer (6-long) Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains Image: Chains	Student Name			Class/Period	Date	2	
Average (mean) Monomers/chain Minimum Monomers Maximum Monomers Median Monomers Median Monomers Calculate the mean by this formula, Monomers in all chains Mean = Total number of monomers in all chains Number of chains = Activity 2 Data Table: Building 2-D Polymers with Bends Number of Chains 0 bends 1 bend 2 bends 3 bends >3 bends Dimer (2-long) I I I I I Trimer (3-long) I I I I I Pentamer (4-long) I I I I I Heptamer (7-long) I I I I I Octamer (8-long) I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	Activity 1 Data Tab	ole: Building St	traight-Chain	Polymers			
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Maximum Monomers Median Monomers Calculate the mean by this formula, Mean = $\frac{Total number of monomers in all chains}{Number of chains} = chains$ Activity 2 Data Table: Building 2-D Polymers with Bends Number of Chains 0 bends 1 bend 2 bends 3 bends >3 bends Dimer (2-long) Image: Comparison of the state of the							
Median Monomers Calculate the mean by this formula,	Minimum			Monomers			
Calculate the mean by this formula, $Mean = \frac{Total number of monomers in all chains}{Number of chains} = \frac{monomers}{monomers}$ Activity 2 Data Table: Building 2-D Polymers with Bends Number of Chains 0 bends 1 bend 2 bends 3 bends >3 bends Dimer (2-long) 1 1 1 1 1 Trimer (3-long) 1 1 1 1 1 Pentamer (4-long) 1 1 1 1 1 Hexamer (6-long) 1 1 1 1 1 1 Octamer (8-long) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1<	Maximum		Monomers				
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Number of Chains0 bends1 bend2 bends3 bends>3 bendsDimer (2-long) </th <th colspan="7">Total number of monomers in all chains monomers</th>	Total number of monomers in all chains monomers						
Dimer (2-long)Image: Constraint of the second s							
Trimer (3-long)Image: Constraint of the second		0 bends	1 bend	2 bends	3 bends	>3 bends	
Tetramer (4-long) Image: Constraint of the second	Dimer (2-long)						
Pentamer (5-long) Image: Constraint of the second	Trimer (3-long)						
Hexamer (6-long) Image: Constraint of the second	Tetramer (4-long)						
Heptamer (7-long) Image: Constraint of the second	Pentamer (5-long)						
Octamer (8-long) Image: Constraint of the second	Hexamer (6-long)						
Nonamer (9-long)	Heptamer (7-long)						
Decamer (10-long)	Octamer (8-long)						
	Nonamer (9-long)						
Polymer (>10-long)	Decamer (10-long)						
	Polymer (>10-long)						

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Building Polymers Activity: Data Analysis and Discussion

Questions

- 1. In your data, do the median and mean have the same value? Why do you think that happened?
- 2. List three differences between the chains you made in Activity 1 and Activity 2.

3. Based on your data, is the median or mean the most important number to describe your collection of chains? Explain your answer.