

Name: _____ Date: _____ Class: _____

3D Bone Prototype Rubric

Score earned →	4 (best)	3	2	1
Bone Diagrams	Diagrams are neat with clear measurements and labeling for all components.	Diagrams are neat with clear measurements and labeling for most components.	Diagrams provide clear measurements and labeling for most components.	Diagrams do not show measurements clearly or are otherwise inadequately labeled.
Construction Materials	Appropriate materials were selected and creatively modified in ways that made them even better.	Appropriate materials were selected and there was an attempt at creative modification to make them even better.	Appropriate materials were selected.	Inappropriate materials were selected and contributed to a product that performed poorly.
Construction	Great care was taken in the fabrication process so that the structure is neat, attractive and follows plans accurately.	Fabrication was careful and accurate for the most part, but 1-2 details could have been refined for a better end product.	Fabrication accurately followed the plans, but 3-4 details could have been refined for a better end product.	Fabrication appears careless and/or haphazard. Many details need refinement for a strong or attractive product.
Testing / Modifications	Clear evidence of troubleshooting, testing and refinements based on data or scientific principles.	Clear evidence of troubleshooting, testing and refinements.	Some evidence of troubleshooting, testing and refinements.	Little evidence of troubleshooting, testing or refinements.
Knowledge	Explanations by all group members indicate a clear and accurate understanding of scientific principles underlying the construction and modifications.	Explanations by all group members indicate a relatively accurate understanding of scientific principles underlying the construction and modifications.	Explanations by most group members indicate relatively accurate understanding of scientific principles underlying the construction and modifications.	Explanations by several members of the group do not illustrate much understanding of scientific principles underlying the construction and modifications.
Mass	The mass of the bone is within 5% of the real turkey femur mass.	The mass of the bone is within 15% of the real turkey femur mass.	The mass of the bone is within 25% of the real turkey femur mass.	The mass of the bone is not within 25% of the real turkey femur mass.
Density	The density of the bone is within 5% of the real turkey femur density.	The density of the bone is within 15% of the real turkey femur density.	The density of the bone is within 25% of the real turkey femur density.	The density of the bone is not within 25% of the real turkey femur density.