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| * Materials classes: Metals, ceramics, polymers, composites * Properties of Materials: mechanical, electrical, optical properties, etc. * Social/Cultural properties of materials. * Role of clay, building, storage, cooking, etc. * Catal Hoyuk: Importance, history * Entanglement principles * Humans depend on things and things depend on humans * Rare earth entanglement * Operational chain * Amorphous materials, obsidian * Flintknapping * Glass * Network modifiers versus network formers * Glass transition temperature * Soda lime glass * Natron and calcium carbonate * History of glass * Antimony and colorless glass * Borosilicate glass (Pyrex) * Impact of Glass on Modern Society * Concrete vs. Cement * Pozzulana Cement * Limestone versus Lime (CaCO3=>CaO +CO2), role in concrete * Hydraulic Cement | * Modern Portland Cement * Clinker * Impact of concrete on Roman Society * Impact of concrete on modern society * Copper and bronze alloys * Work hardening, alloy hardening * Role of arsenic and tin * Dislocations * Annealing or tempering * Phase diagram * Impact of bronze * Trade routes * Impact of trade * Development of trade centers * Processing methods, smelting, casting |