Chapter 1 Lesson 2 Name_____
Classifying Organisms

Topics	Notes, Diagrams, Drawings
How are living things classified?	Aristotle (384-322 BC) placed all organisms into 2 groups: • animals: based on presence of "red blood," the animal's environment, & the size and shape of the animal • plants: according to structure and size of the plant & whether the plant was a tree, shrub, or herb (19)
How are kingdoms determined?	Carolus Linnaeus (1700s) • classified organisms based on similar structures • placed all organisms into 2 groups, called kingdoms Robert H. Whittaker (1969) • proposed a 5-kingdom system for classifying organisms • kingdoms Monera, Protista, Plantae, Fungi, and Animalia (20)
Determining Domains What evidence is used to classify living things into groups?	• systematics: current classification method • uses all the evidence that is known about organisms to classify them • includes: organism's cell type, habitat, way the organism obtains food and energy, structure and function of its features, and common ancestry of organisms • also includes: molecular analysis- the study of molecules such as DNA within organisms using systematics, scientists identified 2 distinct groups in Kingdom Monera: Bacteria and Archaea • led to the development of another level of classification called domains • all organisms are classified into 1 of the 3 domains, and then into 1 of the 5 kingdoms (20)
Scientific Names What is binomial nomenclature?	• the system we use for naming organisms • Linnaeus's naming system • gives each organism a 2-word scientific name • the name of an organism's species • species: a group of organisms that have similar traits and are able to produce fertile offspring • the first word is an organism's genus • genus: a group of similar species • the second word might describe the organism's appearance or behavior (21)

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How do species and genus relate to kingdoms and domains?	• similar species are grouped into 1 genus • similar genera are grouped into families, orders, classes, phyla, kingdoms, and then domains (21)
Why does every species have a scientific name?	common names might be used for a number of different species (i.e: bird, tree, mushroom) or organisms (i.e: pine trees), but an organism only has 1 scientific name • each species has its own scientific name • scientific names are the same worldwide • communication about organisms more effective because everyone uses the same name for the same species (22)
Classification Tools • What is a dichotomous key?	• a series of descriptions arranged in pairs that leads the user to the identification of an unknown organism • the chosen description leads to either another pair of statements or the identification of the organism • choices continue until the organism is identified (22)
• What is a cladogram?	• a branched diagram that shows the relationships among organisms, including common ancestors • each branch follows a new characteristic • each characteristic is observed in all species to the right • i.e: salamander, lizard, hamster, chimpanzee have lungs, the salmon does not, therefore they are more closely related to each other than to the salmon (23)