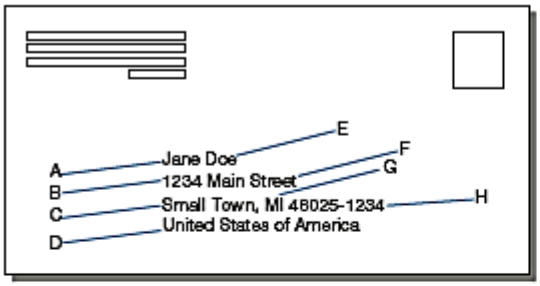
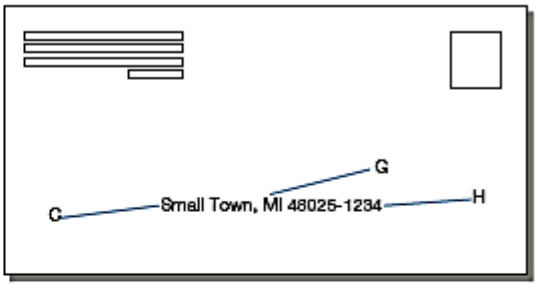
Biological Classification

Model 1 – Addressing an Envelope



Addressed Envelope 1



Addressed Envelope 2

1. According to the envelope in Model 1, who is supposed to receive the letter?

2. Decide with your group which of the two letters in Model 1 will be more successful at reaching its destination. Justify your choice.

3. In Addressed Envelope 1, which four letters (A–H) correspond to the most specific part of the address?

4. In Addressed Envelope 1, which four letters (A–H) correspond to the most general part of the address?

5. In recent years, the United States Post Office has introduced a zip code plus 4 (H). Thinking about what you've learned about addresses, why would this additional information be added to address labels?

	Envelope (Jane Doe)	**Taxa**	**Lion** *(Panthera leo)*	**Tiger** *(Panthera tigris)*	**House Cat** *(Felis catus)*
Country		Kingdom	Animalia	Animalia	Animalia
State and Zip			Chordata	Chordata	Chordata
Town			Mammalia	Mammalia	Mammalia
Street name			Carnivora	Carnivora	Carnivora
House No.			Felidae	Felidae	Felidae
Last name			*Panthera**	*Panthera*	*Felis*
First name			*leo*	*tigris*	*catus*

6. Using the envelope outline from Model 1, classify the full address by writing the appropriate information in the "Envelope" column in Model 2.

Biological Classification Pg. 2

Read This!

Carolus Linneaus (1707–1778) is known as the father of modern taxonomy. Taxonomy is the science of finding, describing, and categorizing organisms with the ultimate goal to name the species. In traditional Linnean taxonomy the seven major taxonomic groups are (in order from least specific to most specific) Kingdom, Phylum, Class, Order, Family, Genus, and Species. Modern taxonomy categorizes the six kingdoms into three domains.

7. Use the Linnaean taxonomic groupings to complete the third column of the table above.
8. Which two of the three cats listed in Model 2 are most closely related? Explain your answer.
9. At which taxonomic level do the two cats you identified in Question 8 separate?
10. What is the most specific taxonomic grouping in which all three cats are the same?
11. What is different about the way the genus and species names are written compared to the other taxa?
12. The genus and species names are collectively referred to as the scientific name. It is written in a form known as **binomial nomenclature**, a two-term Latin naming system. There are three rules for writing a scientific name using this system. Analyze the information in Model 2 to complete the rules below:

    Rule 1: The scientific name is always written in ____ parts, with the genus name written _____ and the species name _____.

    Rule 2: The scientific name is always written in _____. If it is handwritten, it is written in cursive or underlined.

    Rule 3: The first letter of the genus name is a _____ letter.
13. This system is used all over the world. Why do you think Latin is used instead of a more modern language?
14. Using this system, would it be possible for two different species to have the same name?
15. In Linnaeus's time, classification was based on the appearance of organisms. Think about the appearance of organisms such as tadpoles and frogs, sharks and dolphins, and penguins and eagles. What are the limitations of classifying organisms by only their appearance?