Models in Earth Science Section 2.3 pg.48-51 Objectives

- Explain how models are used in science.
- **Describe** the three types of models.
- Identify which types of models are best for certain topics.
- **Describe** the climate model as an example of a mathematical model.

Science Humor! What is the only thing that you can put in a bucket that will make it lighter?



I. Types of Scientific Models

A. Physical Models Physical models are models that you can touch.

B. Mathematical Models A mathematical model is made up of mathematical equations and data.

C. Conceptual Model Some conceptual models are systems of ideas. Others are based on making comparisons with familiar things to help illustrate or explain an idea.



II. Choosing the Right Model A. Which Model? The right model must be chosen in order for the scientist to be able Atlanta to learn from it. For example, a physical model is useful to Atlanta. understand objects that are too small or too large to see completely.



III. Climate Models

A. Modeling Earth's Atmosphere A climate model is a mathematical model with so many variables that powerful computers are needed to process the data.



Critiquing Models

- 1. List 5 ways this model is like a real fish.
- 2. List 5 ways this model is not like a real fish.
- 3. Why is this model useful?
- 4. How can this model be improved?



Reviewing Models

- Write down 1 example of each type of model.
- Answer the following questions for each example.
- 1. Why is this model useful?

2. What is a limitation of this model? In other words, how can the model be improved?