

MODELS

Name _____

A model is a representation of an object, idea or process.

A model is used to learn about the important properties of the object, idea or process.

Many kinds of models exist. Road maps, computer simulations, sheet music, photographs and a football playbook are all examples of models.

Describe what can be learned when using each of the listed models.

road map _____

computer simulation _____

sheet music _____

football playbook _____

Mathematical Models

Models can represent mathematical objects, concepts or procedures. Possible math models include concrete objects, diagrams, word descriptions, formulas, number lists and graphs. We use the models to understand and explore mathematical properties and relationships.

Visual models include concrete objects such as blocks or tiles as well as sketches, number lines and graphs. Visual models allow us to "see" number properties and number operations.

Everyday "objects" can be used as concrete visual models.

Examples: popsicle sticks, bottle caps, cardboard boxes, stick figures

Concrete visual models also include objects specifically designed to demonstrate math concepts; these objects are called math manipulatives.

Examples: base ten blocks, number tiles, geoboards

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In the activities on the next page you will build concrete models to demonstrate special number properties. The tasks can be completed by students working in pairs or by the whole class working as a group.

Directions for partner activity:

"Objects" can be unit cubes, blocks or number tiles. Each cube, block or tile ■ represents one unit. Student partners arrange objects to construct models.

Directions for whole class activity:

Use students as "objects". Selected students stand in view of class; class decides how students should be arranged to construct models.