

Summary

- Models help solve design problems, verify the workability of designs, and have uses beyond the design stages.
- Models can be computer-generated or handmade.
- Mockups and prototypes are full-size models of a product, but prototypes are also functional.
- The automotive, aerospace, architectural, shipbuilding, city planning, and construction industries all make extensive use of models, mockups, and prototypes.
- Models can be made from materials commonly found in hobby supply stores.

Test Your Knowledge

Answer the following questions using the information provided in this chapter.

1. Define the term model as it relates to industry.
2. What is a CAD-generated wireframe model and how is it different from a surface model?
3. What is a mockup?
4. What is a prototype?
5. List four industries that employ models, mockups, and prototypes as design tools. Briefly describe how each industry listed uses them.
6. Walls and partitions in a model home are usually constructed of _____ wood.
7. Roofs, driveways, and walkways can be made from different kinds and grades of _____.
8. Models of cars, planes, and boats may be made from what kinds of materials?

Applying Your Knowledge (optional)

1. Visit a model or hobby shop, then prepare a list of available materials that may be used for building architectural models.
2. Review technical magazines and clip illustrations that show models, mockups, and prototypes being used for engineering, educational, planning, or other purposes. (Do not cut up library copies.)
3. Make a collection of materials suitable for building model homes.
4. Visit a professional modelmaker in your community. With permission, make a series of slides showing examples of various models and how these models are made. Then, give a talk to your class on professional model making.

STEM Activities (optional)

1. **Engineering:** Make a scale model of your drafting room. Measure the square footage and use an appropriate scale. Construct desks and workstations using materials of your choice or use model furniture. Discuss alternate layouts for the room.
2. **Engineering:** Construct a model helicopter similar to the one shown in **Figure 18-16**. Design and construct from balsa wood a minimum building that would protect the helicopter from the elements.