PROJECT!

A-MAZE-ING TUNNELS

The underground city of Derinkuyu was made of a series of tunnels and caves, which could fit about 20,000 people! The city had stables, cellars, storage rooms, and chapels, just like an aboveground city. You can make your own tunnel city.

SUPPLIES

- engineering notebook and pencil
- toilet and paper towel tubes
- large cardboard box or plastic bin
- tape
- scissors
- ruler

1 Sketch designs for your tunnel city in your engineering notebook. This is your brainstorming step! Your city should fit into your box. What kinds of services do you need to provide for in your city? What will people eat? Where will they go to school? Where will they keep their animals? Decide how long and wide each of your tunnels and caves need to be for their intended purpose.

2 Make your prototype. Cut the tubes to the right lengths. Begin to lay out the tubes according to your design. Is there anything you need to change? What material can you use for caves? Evaluate your design and change anything you think could be better.

ESSENTIAL QUESTIONS

Each chapter of this book begins with an essential question to help guide your exploration of tunnels. Keep the question in your mind as you read the chapter. At the end of each chapter, use your engineering notebook to record your thoughts and answers.

INVESTIGATE!

Why are tunnels useful in big cities where there are lots of people?

PROJECT!

THE UNDERGROUND CITY OF DERINKUYU (CREDIT: HELEN COOK)

3 When you are satisfied with your city, tape the tunnels into the box to keep them in place. Are you able to make a continuous tunnel all the way around your city?

TRY THIS! Design a second level for your tunnel city. How will your city dwellers get from one level to another? Do you need to add stairs or ladders? How will food and water be transported through your multi-level city?