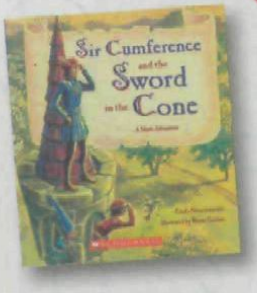
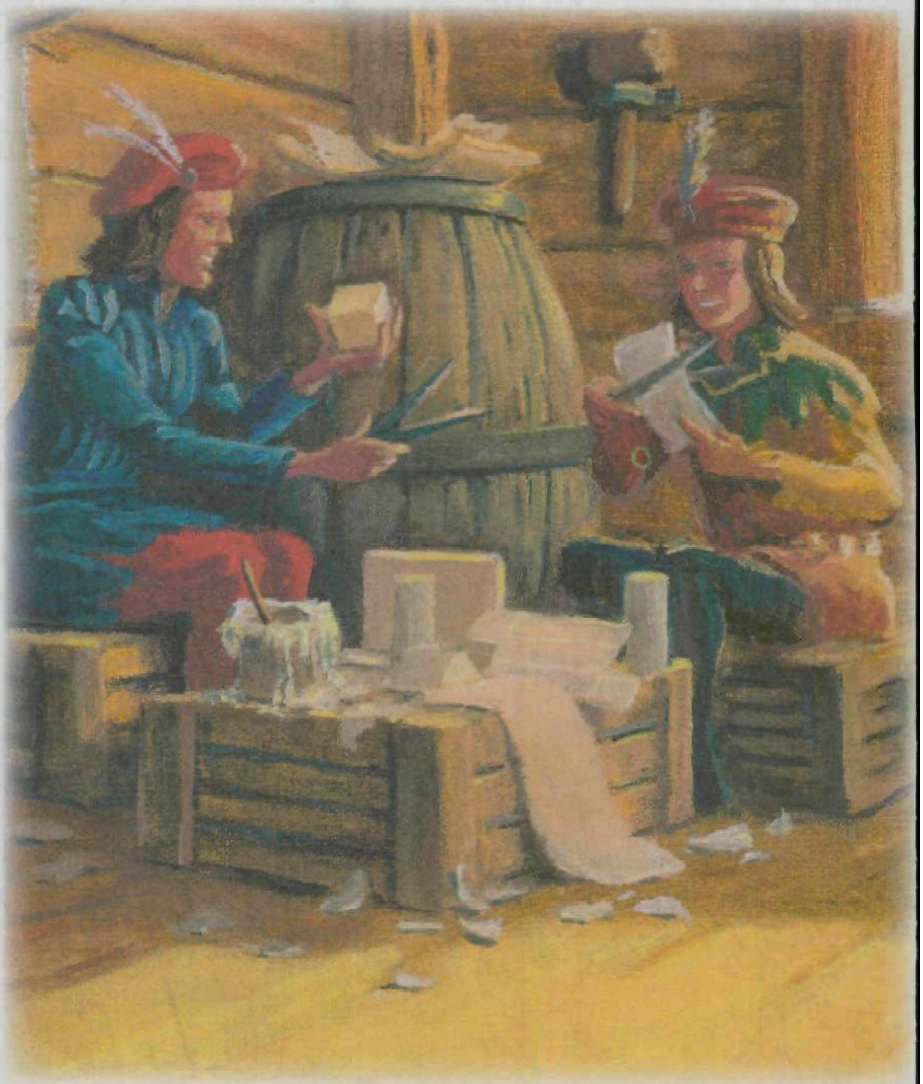
The Sword in the Cone



In this book, a knight uses geometry on his quest to become king!

Hear ye! Hear ye! Listen to the tale of *Sir Cumference and the Sword in the Cone*. In this book, King Arthur is holding a contest to see who will be the next king. The knight who solves King Arthur's geometry puzzles and finds the sword Edgecalibur will rule the kingdom!

Sir Cumference's son Radius helps his friend Vertex search for the sword. Join them as they face some of King Arthur's challenges. You'll see that in this book, **faces, edges, and vertices** rule!

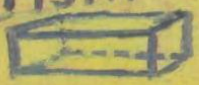


Faces, Edges, and Vertices

Face—a flat surface on a 3-D (solid) object

Edge—the line segment on which two faces of a 3-D object meet

Vertex (plural: **vertices**)—in a 3-D object, the corner point where 3 or more edges meet

Shape	Flat Faces	Corner Points	Faces + Points	Straight Edges	Faces + Points − Edges
Cube 	6	8	14	12	2
Pyramid 					
Rectangular Prism 					
Triangular Prism 					

What to Do

Use the information in "Faces, Edges, and Vertices" to answer the questions.

1 One of King Arthur's challenges is to identify 3-D shapes in the castle that pass a "two's test." That means if you add up a shape's number of faces and vertices, then subtract that shape's number of edges, the answer must be 2. All of the shapes in the chart above pass the two's test. Fill in the chart to see for yourself. We did the first row for you.

2 Vertex and Radius learn that Edgecalibur is hidden somewhere in the castle. It's inside a shape that *doesn't* pass the two's test. Look at the cone below. Read the definitions of faces, edges, and vertices again. Why doesn't a cone pass the test?

3 In the next column are other shapes that Vertex and Radius see in the castle. Write the name of each shape, and say if it does or doesn't pass the two's test.

A. 

B. 

C. 

ABOUT THE BOOK

Will Vertex become the next King? To get the rest of the story, read *Sir Cumference and the Sword in the Cone*, by Cindy Neuschwander and Wayne Geehan (Charlesbridge, 2003)!