

# Architectural Engineering Challenges

Adapted from p. 30 & 31 of Iggy Peck's Big Project Book for Amazing Architects

Written by Andrea Beaty and Illustrated by David Roberts

Published by Abrams Books for Young Readers

## Spaghetti Bridge:

Set up two stacks of books that are even in height.

Arrange them with a 10 inch space between the stacks.

Using only 20 strands of uncooked spaghetti and 20 mini marshmallows, build a bridge that spans the gap between the stacks of books.

Place a plastic card or a playing card near the center of the bridge.

Place a penny on the card. One by one, keep adding pennies.

How many pennies will it hold before it breaks or falls apart?

Can you improve your design and build a bridge that will hold more pennies?

## Straw Tower:

What is the tallest stable structure you can make using only 20 plastic straws and 12 inches of masking tape? Measure your structure.

Now try it using 20 straws but only 5 inches of tape. How tall is your tallest structure?

## Pipe Cleaner Structure:

What is the tallest free standing structure you can build using only 12 pipe cleaners (fuzzy chenille wires)? Can you improve your design?

Try the challenge with different numbers of pipe cleaners.

What shape or size seems to make the most stable base?