Code the Tongue twisters

Introduction:

Your engineering firm (Ozark Lakes Engineering, Inc.) will serve all communication needs of the Things of Yesterday Society (TOYS). Many of the TOYS members like to play tongue twisters and compete once a week. A couple of examples are as follows:

1. *Can you can a can as a canner can can a can?*
2. *Peter Piper picked a peck of pickled peppers.*
   A peck of pickled peppers Peter Piper picked.
   If Peter Piper picked a peck of pickled peppers,
   Where's the peck of pickled peppers Peter Piper picked?
3. *How many cookies could a good cook cook*
   If a good cook could cook cookies?
   A good cook could cook as much cookies as a good cook who could cook cookies.

(selected from 1st International Collection of Tongue Twisters: English Tongue Twisters, by Mr. Twister http://www.uebersetzung.at/twister/en.htm)

The members can submit one twister to the organizer through an internal radio system, and the organizer selects one from all submissions and broadcast to the members before the competition.

You are to design the radio system to achieve the lowest cost while guarantee the quality of communications. This module is to figure out how to code the sources to save storage cost.

Instructions:

1. Use Matlab to analyze the problem and model your system designs.
2. Select a set of alphabet characters to capture (represent) the tongue twister as a message and input a tong twister from a txt file.
3. Find the entropy of the message and encode the message using the least number of bits as possible.
4. Compare the existing source coding schemes and comment on the quality and cost of these schemes.

(pepper photos from http://www.burpee.com/vegetables/peppers/)