Scytale Messages

Introduction

A scytale message is an ancient way to send a secret code or cipher. Use objects at home to create a message that needs a cylinder to be read.

Image Source

Think About This

How would you write a secret message to someone without technology and with limited supplies?

Materials

- 1 to 3 cylindrical objects, such as:
  - Marker
  - Cup without a handle
  - Toilet paper or paper towel roll
  - Broomstick
  - Flashlight
  - Soda can
- Long strips of paper, enough to total 24-36 inches
- Writing utensil
- Tape
- Ruler or tape measure

Do Ahead of Time

- Gather cylindrical items
- Cut strip of paper to correct length (tape paper together to make strips longer)

Directions

Design your own scytale (rhymes with "Italy"), a device once used to send secret messages! Use strips of paper wrapped around a cylinder to create and decipher your message.

1 Tape the short edge of the paper strip to one end of the cylindrical object.

2 Wrap the paper around the object so it covers the entire object. Make sure that the paper does not overlap.

3 Next, tape the paper at the opposite end of the object to hold it in place.

4 Use a writing utensil to write your secret message across each turn of the paper. You can use more than one line for long words or a sentence.

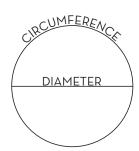5 Fill in additional letters around the entire paper. This step will help hide your message.

6 Remove the tape and unwrap the paper from the object. Try wrapping the paper strip again around the object to make sure that your message can be read.

7 Ask someone else to try and read the message using your device!

What might happen if you wrapped your message on a different size cylindrical object? Try it and see!

What's Happening?

A scytale message uses circumference, the distance around the outside of a round object, to carefully line up the wraps of paper. An object of a different diameter, the measurement straight across the middle of an object, has a different circumference.

To find the circumference of an object, use π(pi) and the object's diameter:

Circumference = π(pi) x diameter

Remember: · is equal to about 3.14

Small changes in the diameter of a cylinder change the circumference – by over three times as much! A scytale wrapped around the wrong size object will not line up and your message could not be read!

Long ago, the ancient Greeks used scytale messages as a way to communicate during battles. A rod was wrapped in a cloth with letters on it. Once wrapped around the rod correctly, the cloth would show the secret message. Only trusted people had the correctly sized rod to read the scytale code.

Image source   Image source

Take it Further:

Build a scytale for someone to else to solve! Give them your paper secret message and lay out all of the cylindrical objects to have them test which object is correct.

Build a scytale message that includes a coded language instead of letters then have someone decipher your message with a key.

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