

# Twisted Path Cipher

**Overview:** This cipher method uses a matrix and a path in order to encode your message. The shape of the path you create within the matrix of a Twisted Path Cipher determines how difficult it will be to break the code.

## Materials

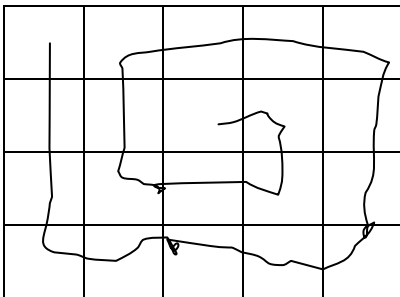
- Pencil
- Paper

**Activity:** Let's code the message: "INSIDE THE OLD PIANO"

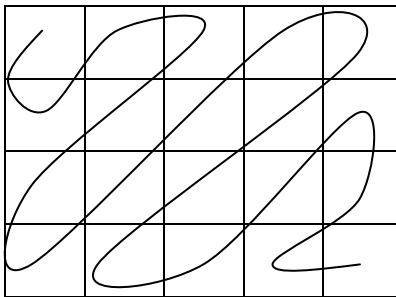
First count the number of letters in the message, then come up with a matrix (a table) that contains all the letters. Since this message has 17 letters, we'll need a 4 x 5 table as shown. Write one letter in each box, and if you have any empty boxes left, add a couple of extras like X, Q, and Z. (Tip: It's better to make a table with five boxes per row – you'll see why in a minute).

I	N	S	I	D
E	T	H	E	O
L	D	P	I	A
N	O	X	Q	Z

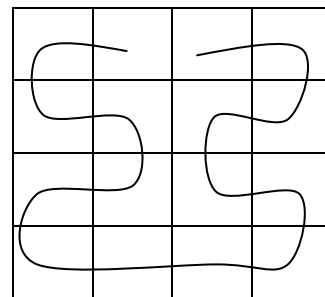
Now we choose a path in which we'll be listing the letters to form the cipher. You can choose a spiral in clockwise direction and anticlockwise spiral, a wavy line, or anything else you can dream up. Just make sure that the line goes through *every* box, even the extra letter boxes. And no breaks in the path – it's got to be a continuous line.



Spiral



Wavy line



Series of connected wavy lines

Let's use a clockwise spiral. Begin at H and write the letters that lie along the path, grouping them in groups of 5 as you go along using this diagram:

HEIPD TNSID OAZQX ONLEI

When you give your friend this message, make sure you also let them know what kind of path you chose so they can break it easily!

I	N	S	I	D
E	T	H	E	O
L	D	P	I	A
N	O	X	Q	Z



## Answers to Exercises: Twisted Path cipher

1. 15
2. 30
3. 25
4. 20
5. Spiral in clockwise direction from the center
6. Spiral in anticlockwise direction from the first cell
7. AVURO EWILL EKYAD OTFLI
8. AYEHT WMONM TSXEN ECOYA
9. HENNE TTTEN OIYAD GNPDA IWILL
10. ETHTA ERBIW ILLEZ