

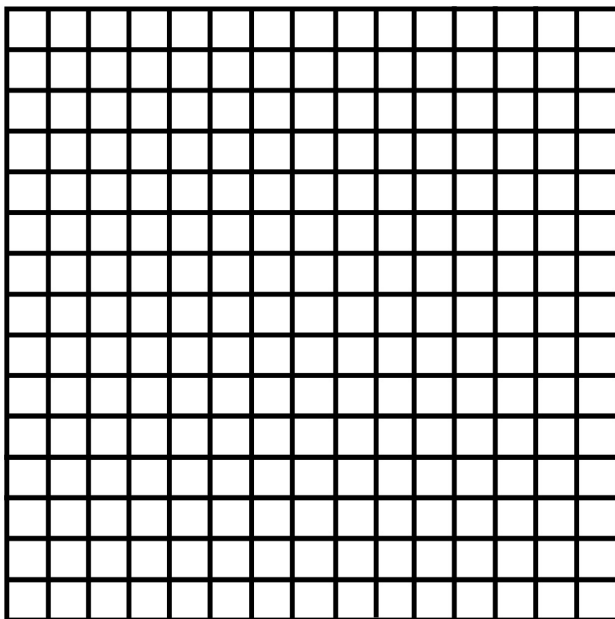


# QUANTUM CODE CRUNCHERS

## A Space Communications and Navigation (SCaN) Binary Code Hacking Activity

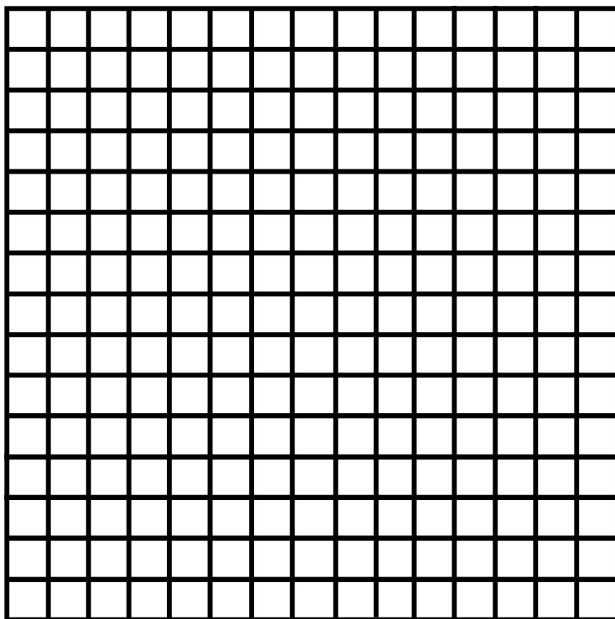
**|| GRADES 3 - 6 ||** NASA SCaN aims to use quantum communications to safely send and receive space data. Particles known as quantum qubits securely transmit messages using combinations of “1” and “0” to represent the data as binary code.

**|| INSTRUCTIONS ||** Great job decoding those images. Now NASA needs your help to convert the binary code on the right into pictures on the left. Leave all “0” pixels white, and color in all “1” pixels black. Can you reveal the hidden space images?



```

0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 1 0 0 0 0 0 1 0 0 0 0 1 0
0 0 1 0 0 0 1 1 1 0 0 0 1 0
0 0 0 0 1 1 0 0 0 1 1 0 0 0
0 0 0 1 0 0 0 0 0 0 0 1 0 0
0 0 0 1 0 0 0 0 0 0 0 1 0 0
0 0 1 1 1 1 1 1 1 1 1 1 1 0
1 1 1 0 1 1 1 0 1 1 1 0 1 1
0 0 1 0 0 1 0 0 0 1 0 0 1 0
0 0 0 1 0 0 0 0 0 0 0 1 0 0
0 0 0 1 0 0 0 0 0 0 0 1 0 0
0 0 0 0 1 1 0 0 0 1 1 0 0 0
0 0 1 0 0 0 1 1 1 0 0 0 1 0
0 1 0 0 0 0 0 1 0 0 0 0 1 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0
    
```



```

0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 1 1 1
0 0 0 0 0 0 0 0 0 0 1 1 1 1
0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1 1 1 1 0
0 1 1 0 0 0 0 0 0 0 0 0 1 1
0 0 1 1 1 1 1 1 1 1 1 1 1 0
0 0 0 1 1 0 0 0 0 1 1 0 0 0
0 0 1 1 0 1 0 0 1 1 0 1 0 0
0 0 1 0 1 1 0 0 1 0 1 1 0 0
0 0 0 1 1 0 0 0 0 1 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0
    
```