

### Name That Tune- Activity

- 1) When taking music recognition at its simplest form it is essentially the process of matching patterns, this can be seen in other real world applications such as; fingerprinting, DNA, Google searches, just to name a few. In order for technology to convert these factors to later compare them their simplest form is represented numerically. Therefore you must convert these phrases into numeric representations ensure that spaces are represented with a "0".

A	B	C	D	E	F	G	H	I	J	K	L	M
01	02	03	04	05	06	07	08	09	10	11	12	13
N	O	P	Q	R	S	T	U	V	W	X	Z	Y
14	15	16	17	18	19	20	21	22	23	24	25	26

- 1) Poker Face
- 2) Waking Up In Vegas
- 3) DJ Got Us Falling In Love
- 4) Love The Way You Lie

- 2) To turn these numeric codes back to words we must reverse the process.

- 1) 1209202012050192102130118091405
- 2) 021508051309011401808011619150426
- 3) 200805006091819200032120009190200805004050516051920

- 3) Using the same principles convert your name into a numeric code. Based on the alphabet plus five for example:

DOG = 092012

4) **MOD**

The mod function has many applications so we will study it in some detail. It is used for simple and complex cryptography, calendars and clocks, random number generators, and hash tables. When generating any form of classification system used for creating databases, hash tables are used for turning basic representations into numbers using a specific algorithm.

**Calculate:**

- a)  $17 \pmod{5}$
- b)  $8 \pmod{5}$
- c)  $55 \pmod{5}$
- d)  $4 \pmod{5}$
- e)  $37 \pmod{17}$

Answers-

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- 1) When taking music recognition at its simplest form it is essentially the process of matching patterns, this can be seen in other real world applications such as; fingerprinting, DNA, Google searches, just to

**name a few. In order for technology to convert these factors to later compare them their simplest form is represented numerically. Therefore you must convert these phrases into numeric representations ensure that spaces are represented with a “0”.**

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14	15	16	17	18	19	20	21	22	23	24	25	26

- 5) Poker Face 1615110518006010305
- 6) Waking Up In Vegas 230111091407021160091402205070119
- 7) DJ Got Us Falling In Love  
041000715200211900601121209150700914012152205
- 8) Love The Way You Lie 121522050200805023012602615210120905

**2) To turn these numeric codes back to words we must reverse the process.**

- 4) 1209202012050192102130118091405 Little Submarine
- 5) 021508051309011401808011619150426 Bohemian Rhapsody
- 6) 200805006091819200032120009190200805004050516051920  
The first cut is the deepest

**3) Using the same principles convert your name into a numeric code. Based on the alphabet plus five for example:**

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17 divided by 5 is 3; the remainder is 2.  
8 divided by 5 is 1; the remainder is 3.  
55 divided by 5 is 11; the remainder is 0.  
4 divided by 5 is 0; the remainder is 4.  
37 divided by 17 is 2; the remainder is 3.