

CRYPTOLOGY

Display Materials

Slide Index

These pages are for use in making slides to help where explanations are being given from the front, or when discussions are taking place. Each slide replicates the examples offered on the page identified on the left, without the explanatory text in between. All slides are numbered in the top right-hand corner.

| | | | |
|-------------------------------|-----|--|-----------------|
| Scrambled Messages | 1 | Spacing and ordering only | Slide 1 |
| | 2 | Railfence method | 2 |
| | 2 | Recovering the message | 3 |
| | 4 | Working in a matrix | 4 |
| | 4/5 | Recovering the matrix | 5 |
| Buried Messages | 1 | Message in a grid | Slide 6 |
| | | The Window Reader | 7 |
| | 4 | Putting a message into a grid | 8 |
| | 5 | Burying a message | 9 |
| Coded Messages | 1 | Messages (2) | Slide 10 |
| Simple Ciphers | 1 | Deciphering a message | Slide 11 |
| | 2 | Using Cipher Wheels | 12 |
| | 3 | Scrambling the cipher alphabet | 13 |
| Addition Ciphers | 1 | Working with numbers | Slide 14 |
| | 3 | Deciphering numbers | 15 |
| Multiplication Ciphers | 1 | 11 letters and multiplication (mod 11) | Slide 16 |
| Rotor Ciphers | | <i>none</i> | |
| Cryptanalysis | 1 | Message | Slide 17 |

I LIKE DRINKING LEMONADE WITH ICE IN

ILIKE DRINK INGLE MONAD EWITH ICEIN

ILI KED RIN KIN GLE MON ADE WIT HIC EIN

IL IKED RINK IN GLEM ON A DEW IT HICE IN

NI ECI HTIW EDANOMEL GNIKNIRD EKIL I

NIEC IHTI WED ANOM ELGNI KNIR DEKILI

NIECI HTIWE DANOM ELGNI KNIRD EKILI

NIE CIH TIW EDA NOM ELG NIK NIR DEK ILI

I EKIL GNIKNIRD EDANOMEL HTIW ECI NI

I LIKE DRINKING LEMONADE WITH ICE IN

I I E R N I G E O A E I H C I
L K D I K N L M N D W T I E N

IIERNIGEOAEIHCI LKDIKNLMNDWTIEN

IIERN IGEOA EIHCI LKDIK NLMND WTIEN

LKDIK NLMND WTIEN IIERN IGEOA EIHCI

I K R K G M A W H E
L E I I L O D I I I
I D N N E N E T C N

IKRKG MAWHE LEIIL ODIII IDNNE NETCN

LEIIL ODIII IKRKG MAWHE IDNNE NETCN

IDNNE NETCN IKRKG MAWHE LEIIL ODIII

IDNNE NETCN LEIIL ODIII IKRKG MAWHE

AETOA TCHTM HNTSA ET

AETOATCHT MHNTSAET

A E T O A T C H T
M H N T S A E T

AMEHTNOTASTACENTT

TTHECATSATONTHEMA

THE CAT SAT ON THE MAT

I LIKE DRINKING LEMONADE WITH ICE IN

5 by 6

I L I K E D
R I N K I N
G L E M O N
A D E W I T
H I C E I N

6 by 5

I L I K E
D R I N K
I N G L E
M O N A D
E W I T H
I C E I N

IRGAH LILDI INEEC KKMWE EIOII DNNTN

IDIME ILRNO WCIIG NIEKN LATIE KEDHN

YLWTO SEIUE ASWES PIHYB LOIR

3 by 8

Y T E E W P Y O
 L O I A E I B I
 W S U S S H L R

8 by 3

Y U I
 L E H
 W A Y
 T S B
 O W L
 S E O
 E S I
 I P R

6 by 4

Y E W Y
 L I E B
 W U S L
 T E P O
 O A I I
 S S H R

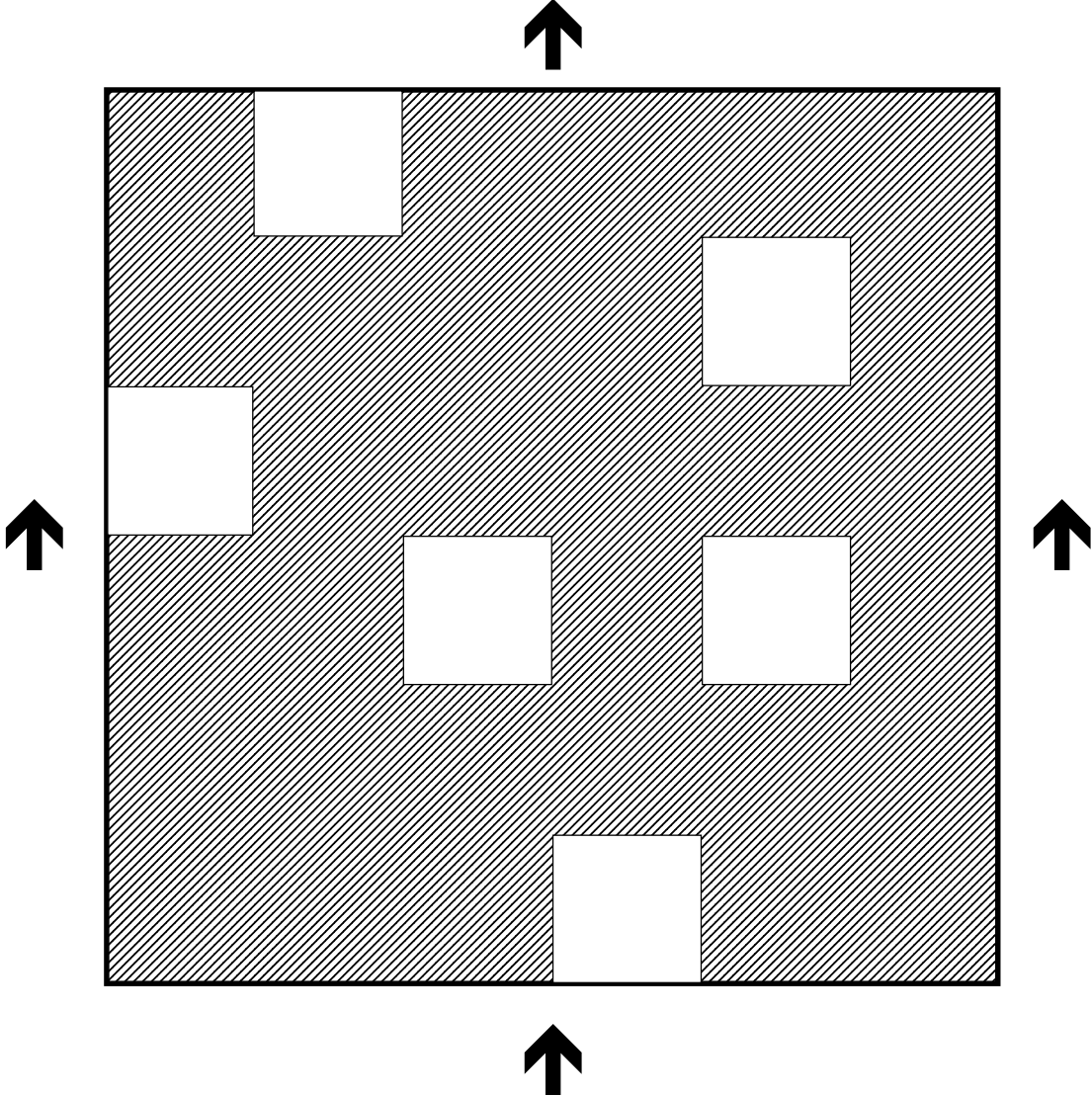
4 by 6

Y O U W I L
 L S E E H O
 W E A S Y I
 T I S P B R

YOUWILLSEEHOWEASYITISPBR

YOU WILL SEE HOW EASY IT IS PBR

| | | | | | |
|---|---|---|---|---|---|
| A | M | Y | A | N | D |
| E | D | T | H | E | T |
| E | O | T | U | D | O |
| W | I | T | U | M | R |
| S | O | O | T | B | Y |
| M | L | E | E | L | S |



**TOSAS ATTTO TRAPR RMAYL
CLEEK SOIMK NUASK**

| | | | | | |
|---|---|---|---|---|---|
| T | O | S | A | S | A |
| T | T | T | O | T | R |
| A | P | R | R | M | A |
| Y | L | C | L | E | E |
| K | S | O | I | M | K |
| N | U | A | S | K | |

**I AM HAVING A REALLY SUPER
TIME AMY EVERY DAY**

| | | | | | |
|---|---|---|---|---|---|
| I | A | M | H | A | V |
| I | N | G | A | R | E |
| A | L | L | Y | S | U |
| P | E | R | T | I | M |
| E | A | M | Y | E | V |
| E | R | Y | D | A | Y |

LWBZZ HMZAH XCFZH KAFKG

LW BZ ZH MZ AH XC FZ HK AF KG

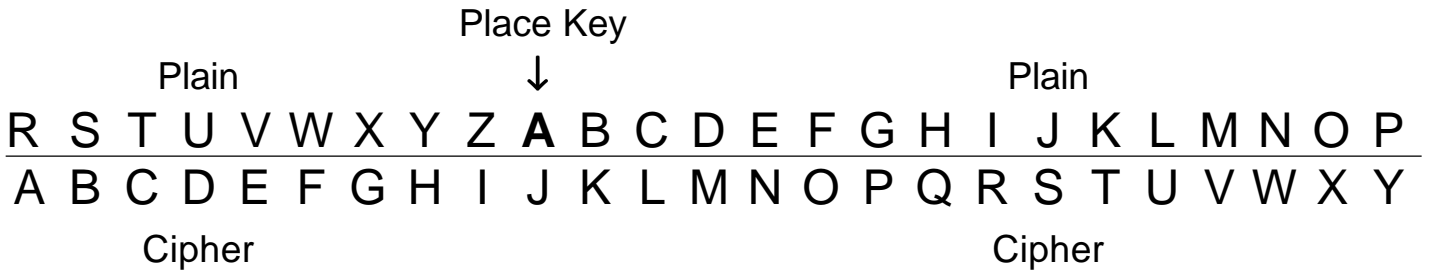
UPBNH ZYECT PEPKQ DILYD DBMTA

HGAGH UFTVL AOZOK JCHNI PPEEH

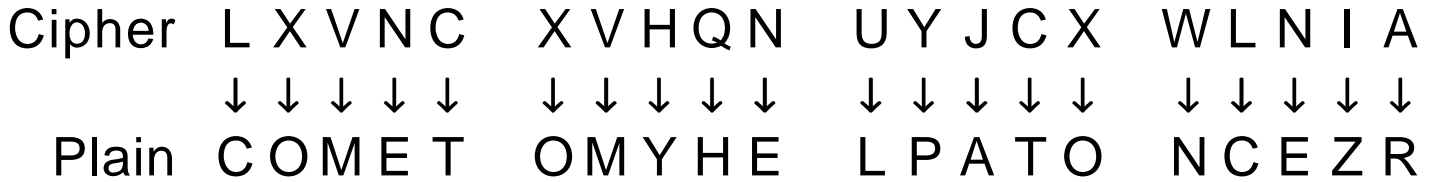
UP BN HZ YE CT PE PK QD

IL YD DB MT AH GA GH UF

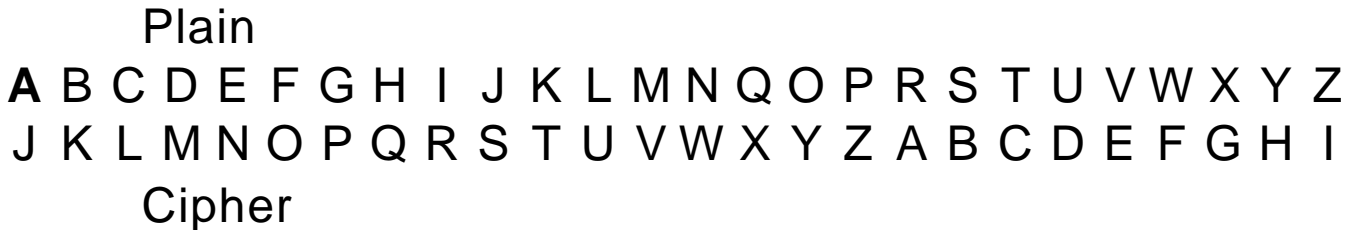
TV LA OZ OK JC HN IP PE EH



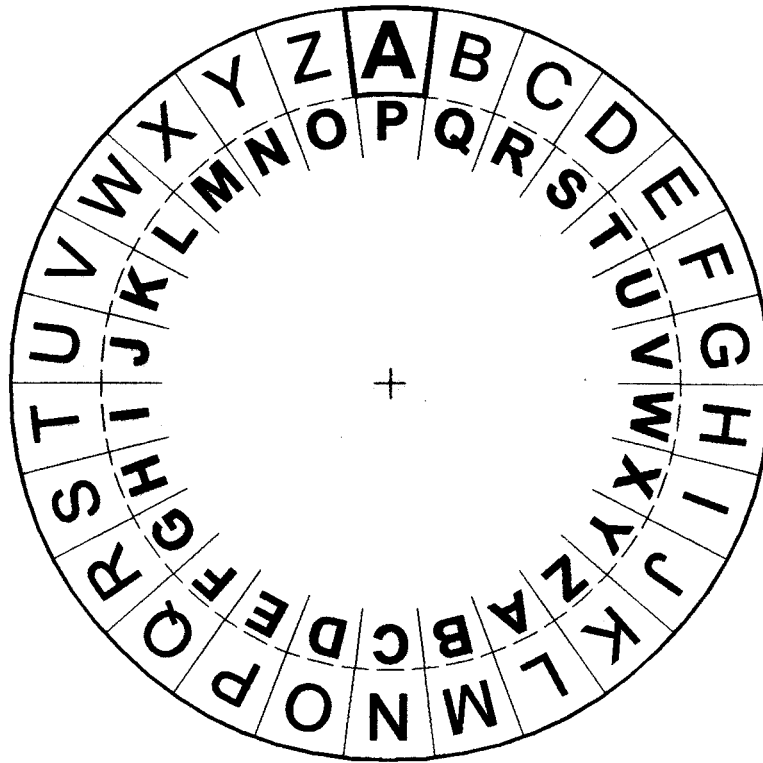
(J) LXVNC X VHQN UYJ CX WLNIA



Come to my help at once



(P) IWTPPI IPRZL XAAQT BPSTD CUGXS PNGQM



| | | | | | |
|--------|-------|-------|-------|-------|-------|
| IWTPPI | IPRZL | XAAQT | BPSTD | CUGXS | PNGQM |
| ↓↓↓↓↓ | ↓↓↓↓↓ | ↓↓↓↓↓ | ↓↓↓↓↓ | ↓↓↓↓↓ | ↓↓↓↓↓ |
| THEAT | TACKW | ILLBE | MADEO | NFRID | AYRBX |

The attack will be made on Friday

BUHHY VTUUK ITUIY AIVEY

YREEV SQRRH FQRFV XSBV

Plain

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| I | Q | J | A | H | B | D | P | T | Z | M | U | C | E | W | F | R | G | K | Y | S | O | V | L | X | N |

Cipher

OCTAHEDRON

OCTAHEDRN

O C T A H E D R N B F G I J K L M P Q S U V W X Y Z

Plain

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | Q | O | P | R | S | T | U | V | W | X | Y | Z |
| O | C | T | A | H | E | D | R | N | B | F | G | I | J | K | L | M | P | Q | S | U | V | W | X | Y | Z |

Cipher

Plain

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | Q | O | P | R | S | T | U | V | W | X | Y | Z |
| O | C | T | A | H | E | D | R | N | Z | Y | X | W | V | U | S | Q | P | M | L | K | J | I | G | F | B |

Cipher

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 0

GIVE ME HELP

| | | | | | | | | | | |
|---------|----|----|----|---|----|---|----|---|----|----|
| Plain | G | I | V | E | M | E | H | E | L | P |
| | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Numbers | 7 | 9 | 22 | 5 | 13 | 5 | 8 | 5 | 12 | 16 |
| | 10 | 12 | 25 | 8 | 16 | 8 | 11 | 8 | 15 | 19 |
| | J | L | Y | H | P | H | K | H | O | S |

(3, 5, 7, 11, 2, 6)

| | | | | | | | | | | |
|---------|----|----|----|----|----|----|----|----|----|----|
| Plain | G | I | V | E | M | E | H | E | L | P |
| | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Numbers | 7 | 9 | 22 | 5 | 13 | 5 | 8 | 5 | 12 | 16 |
| ADD key | 3 | 5 | 7 | 11 | 2 | 6 | 3 | 5 | 7 | 11 |
| Answer | 10 | 14 | 29 | 16 | 15 | 11 | 11 | 10 | 19 | 27 |

– Correction 26 26

Cipher is 10 14 3 16 15 11 11 10 19 1

 or J N C P O K K J S A

GOBET XEHNQ DEOFI

(10, 14, 8, 2, 12, 9)

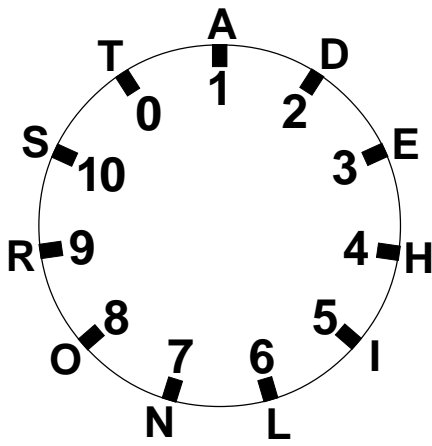
(16, 12, 18, 24, 14, 17)

| | | | | | | | | | | | | | | | |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Cipher | G | O | B | E | T | X | E | H | N | Q | D | E | O | F | I |
| | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Numbers | 7 | 15 | 2 | 5 | 20 | 24 | 5 | 8 | 14 | 17 | 4 | 5 | 15 | 6 | 9 |
| ADD key | 16 | 12 | 18 | 24 | 14 | 17 | 16 | 12 | 18 | 24 | 14 | 17 | 16 | 12 | 18 |
| Answer | 23 | 27 | 20 | 29 | 34 | 41 | 21 | 20 | 32 | 41 | 18 | 22 | 31 | 18 | 27 |
| - 26 ? | | 26 | | 26 | 26 | 26 | | | 26 | 26 | | | 26 | | 26 |
| Plain nos. | 23 | 1 | 20 | 3 | 8 | 15 | 21 | 20 | 6 | 15 | 18 | 22 | 5 | 18 | 1 |
| | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| In letters | W | A | T | C | H | O | U | T | F | O | R | V | E | R | A |

Watch out for Vera

23, 9, 12, 8, 5, 12, 13, 9, 14, 1

W I L H E L M I N A



| x | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|----|----|----|----|----|----|----|----|----|
| 2 | 4 | 6 | 8 | 10 | 1 | 3 | 5 | 7 | 9 |
| 3 | 6 | 9 | 1 | 4 | 7 | 10 | 2 | 5 | 8 |
| 4 | 8 | 1 | 5 | 9 | 2 | 6 | 10 | 3 | 7 |
| 5 | 10 | 4 | 9 | 3 | 8 | 2 | 7 | 1 | 6 |
| 6 | 1 | 7 | 2 | 8 | 3 | 9 | 4 | 10 | 5 |
| 7 | 3 | 10 | 6 | 2 | 9 | 5 | 1 | 8 | 4 |
| 8 | 5 | 2 | 10 | 7 | 4 | 1 | 9 | 6 | 3 |
| 9 | 7 | 5 | 3 | 1 | 10 | 8 | 6 | 4 | 2 |
| 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

RAIDER LOST

(7, 4, 2, 9)

| | | | | | | | | | | |
|-----------|---|---|----|---|----|---|---|---|----|---|
| Plain | R | A | I | D | E | R | L | O | S | T |
| | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Numbers | 9 | 1 | 5 | 2 | 3 | 9 | 6 | 8 | 10 | 0 |
| × key | 7 | 4 | 2 | 9 | 7 | 4 | 2 | 9 | 7 | 4 |
| Answer | 8 | 4 | 10 | 7 | 10 | 3 | 1 | 6 | 4 | 0 |
| | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Cipher is | O | H | S | N | S | E | A | L | H | T |

| | | | | | | | | | | | |
|----------|---|---|---|---|---|---|---|---|---|----|---|
| Encipher | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 0 |
| Decipher | 1 | 6 | 4 | 3 | 9 | 2 | 8 | 7 | 5 | 10 | 0 |

(7, 4, 2, 9)

(8, 3, 6, 5)

E T A O N I R S H D

1 2 3 4
 N J X E H X J V M I J V X M B V M
 - - - - - - - - - - - - - - - - - - - -

5 6 7 8 9
 M B J I R V M D T R R Q J M V G J C
 - - - - - - - - - - - - - - - - - - - - - -

10 11 12 13 14
 T I B J R F C Y M B J X J W Y Y C
 - - - - - - - - - - - - - - - - - - - -

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z