

Gisterhood Gleanths

Cipher

Workbook

- Introduction to ciphers and puzzles
- Age groups' cipher puzzles
- Facilitator's answers



Welcome, Brave Sleuth ...

The Sisterhood Sleuths began with a whisper—an idea that courage, curiosity, and unity could unlock mysteries long forgotten. You, dear reader, are part of that journey.

As you open these pages, remember:

- No puzzle is too great when approached with patience.
- No code is too complex when faced with teamwork.
- And no journey is impossible when your heart leads the way.

These worksheets are more than activities. They are the first steps into a world of mystery and empowerment.

So sharpen your mind, take a deep breath, and step forward—adventure awaits!

The Sisterhood Sleuths



Dedication

This workbook is dedicated to every young sleuth around the world who dares to dream, ask questions, solve puzzles, and help others along the way.

To our fans—you are the heartbeat of this journey. Your excitement keeps the mysteries alive, and your courage inspires stories yet unwritten.

Stay curious. Stay kind. Stay brave

Visit www.SisterhoodSleuths.net

Introduction to Ciphers and Puzzles

Numbered Alphabet

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13

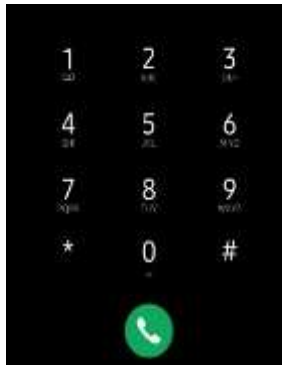
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14	15	16	17	18	19	20	21	22	23	24	25	26

5x5 Alphabet Grid

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



Phone Keypad codes



Each number represents three or four letters of the alphabet.

In a puzzle, a number is repeated to indicate which one of the three or four letters to choose.

A space means a new word.

For example: 7777 = S (7 = PQRS, 4th letter)

Atbash Cipher

This is a simple cipher to decode. All you need to do is create a translation table with the letters of the alphabet written from A to Z across the top and reversed along the bottom. Find the letter in your cipher text on the bottom row and look above it to see it decrypted.

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

Pigpen Cipher Tool

J	U	L	Q	O	C	T	N	F	J	U	L	Q	O	C	T	N	F	V	>	<	^	v	>	<	A
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

Rail Fence Cipher

The Rail Fence cipher is a form of transposition cipher that gets its name from the way in which it is encoded. In the rail fence cipher, the plain text is written downward and diagonally on successive "rails" of an imaginary fence, then moves up when it gets to the bottom. The message is then read off in rows. For example, using three "rails" and a message of 'WE ARE DISCOVERED FLEE AT ONCE', the encrypter writes out:

W...E...C...R...L...T...E
 .E.R.D.S.O.E.E.F.E.A.O.C.
 ..A...I...V...D...E...N..

Then it reads off: WECRL TEERD SOEEF

The Runic Alphabet (Bohuslän style used in this workbook)

Runes are among the oldest writing systems in Europe, used on stone, wood, metal, hides, and even as tattoos. Their origins are uncertain; the runic alphabet—called futhark after its first six letters—takes its name from *rún*, meaning “secret” or “mystery,” with roots stretching back to Proto-Indo-European. The Elder Futhark is the earliest known form, used across Germanic regions including Scandinavia, and later evolved into the Younger Futhark. With the spread of Christianity, runes were gradually Latinised and largely became decorative. Bohuslän runes, used around Gothenburg, Sweden, can be related to the modern English alphabet as follows:

Latin	Rune	Name / Sound	Latin	Rune	Name / Sound
A	ǀ	<i>a</i>	N	ᚠ	<i>n</i>
B	ᚷ	<i>b</i>	O	ǀ	<i>o</i>
C	ƿ	<i>k</i> (used for <i>c</i>)	P	ᚷ	<i>p</i>
D	ᚠ	<i>d</i>	Q	ƿᚠ	<i>kw</i> (<i>k + u</i>)
E	ᚱ	<i>e</i>	R	ᚱ	<i>r</i>
F	ƿ	<i>f</i>	S	ᚵ	<i>s</i>
G	ƿ	<i>g</i>	T	ǀ	<i>t</i>
H	ᚵ	<i>h</i>	U	ᚠ	<i>u</i>
I	ǀ	<i>i</i>	V	ƿ	<i>v</i>
J	ǀ	<i>j</i> (same as <i>i</i>)	W	ƿ	<i>w</i> (same as <i>v</i>)
K	ƿ	<i>k</i>	X	ƿᚵ	<i>ks</i>
L	ǀ	<i>l</i>	Y	ᚱ	<i>y</i>
M	ƿ	<i>m</i>	Z	ᚵ	<i>s/z</i>



The Playfair Cipher



The Playfair cipher is a manual encryption method invented in the 1800s. It was designed so people could encode secret messages using only paper and pencil, without machines. Instead of encrypting single letters, it works on pairs of letters, which makes patterns harder to spot.

How the Playfair cipher works:

Step 1: Make the letter grid

First, you make a **5×5 grid of letters** using a secret word (called a *keyword*).

For our example, the keyword is **SISTERHOOD**.

After removing repeated letters and joining **I and J**, the grid looks like this:

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

Step 2: Get your word ready

Now write the word you want to hide.

Word: **SISTERHOOD**

Split it into pairs of letters:

SI ST ER HO OD

If a pair has the **same letter twice**, put an **X** between them.

If one letter is left at the end, add an **X**.

(*SISTERHOOD is already fine, so we don't change it.*)

Step 3: Find the letter pairs in the grid

Look at **each pair** and find both letters in the grid.

Step 4: Change the letters (the rules)

Rule 1: Same row

If the two letters are on the **same row**:

Move each letter **one step to the right**

If you reach the end, go back to the start

Rule 2: Same column

If the two letters are in the **same column**:

Move each letter **one step down**

If you reach the bottom, go back to the top

Rule 3: Make a box

If the letters are **not** in the same row or column:

Draw a **box** around them

Each letter becomes the one on the **same row** but at the **other corner** of the box

Step 5: Write the new letters

Change each pair using the rules, then write down the new letters.

Example result:

SISTERHOOD → **YSYBOARCEG**

Alchemical Symbols in Ciphers

BUILDINGTHEMAGIC.WORDPRESS.COM

Alchemical Symbols

a reference guide

Fire		Water		Air		Earth			
Mercury	Venus	Earth	Moon	Mars	Jupiter	Saturn	Uranus	Neptune	Sun
Antimony	Aqua Vitae <small>(ethyl alcohol)</small>	Aqua Regia <small>(blend of nitric & hydrochloric acids)</small>	Arsenic	Asbes	Borax <small>(sodium borate)</small>	Brimstone <small>(sulfur)</small>			
Brass	Camphire <small>(Benzoin)</small>	Caput Mortuum <small>(bone to mark size)</small>	Cerussa <small>(lead carbonate, "white lead")</small>	Cinnabar <small>(mercury sulfide)</small>	Copper	Crystal			
Eggshells	Glass	Gold	Gravel	Iron	Lead	Lime <small>(calcium oxide)</small>	Lye		
Magnet	Manure	Oil	Platinum	Quicksilver <small>(mercury)</small>	Sal Ammoniac <small>(ammonia salts, salting salts)</small>	Salt	Saltpeter <small>(potassium nitrate)</small>	Silver	
Soap	Soot	Steel	Sugar	Tartar <small>(potassium carbonate)</small>	Tin	Urine	Vinegar	Vitriol	Wax



The Vigenère cipher



The Vigenère cipher is a way to hide a message by using a secret word (a key) to change each letter.

Instead of shifting every letter the same amount (like the Caesar cipher), the shift changes based on the letters in the key.

Step 1: Choose a Key Word: Pick a word that both the sender and receiver know.

Example key:

KEY

Step 2: Write the Message and Repeat the Key

Message:

HELP EACH OTHER

Key repeated to match:

KEYK EYCKE YKEY

(Spaces don't matter.)

Step 3: Shift Letters Using the Key

Each key letter tells you **how far to shift**:

- A = shift 0
- B = shift 1
- C = shift 2
- ...
- K = shift 10
- Y = shift 24

Example: H + K → R
 E + E → I
 L + Y → J

You do this for **every letter**.

To decode: Use the **same key**; Shift the letters **backward instead of forward**

CONVERTING binary to ASCII code to find letters

Computers don't understand letters like **A, B, C**. They understand **binary**, which is just **0s and 1s**. To turn binary into letters, computers use a system called **ASCII**.

Step 1: Break the binary into groups of 8

Each **letter** is made from **8 binary digits** (called a *byte*).

Example:

01001000 01101001

Step 2: Convert each group to a number: Change each 8-bit group from **binary to decimal**.

- 01001000 = **72**
- 01101001 = **105**

(You can use a calculator or a binary-to-decimal chart.)

Step 3: Match the number to an ASCII letter. ASCII has a table that matches numbers to letters.

- **72 = H**
- **105 = I**

Where to find them:

- **GeeksforGeeks**: Offers a comprehensive ASCII table with values.
- **cabl.eayra.ch**: Shows hex, binary, and character values.
- **SS64.com**: A simple reference table.
- **theasciicode.com.ar**: Lists alphanumeric and symbols with their codes.



Ages 10-12: Beginner Gleuths

Welcome to your first steps as a sleuth! These puzzles train your mind to notice patterns, symbols, and hidden messages.

Think slowly. Look twice. Trust your instincts.

The mystery begins here!

Cipher 1

How to solve it: Shift letters forward by 1 in the alphabet.

Puzzle: cf csbwf cf usvf

Cipher 2

How to solve it: Read the words from last to first.

Puzzle: book the read always should you why

Cipher 3

How to solve it: Write the first letter of each pictured item but put them in the correct order!

Puzzle:     

Cipher 4

How to solve it: Decode the message by taking every second letter, starting with the first.

Puzzle: YqOlUxCpAfNxFblzNoDvAbWeAtY

Cipher 5

How to solve it: Translate emojis into simple words.

Puzzle:    

Cipher 6

How to solve it: Convert numbers to letters using A=1, B=2...

Puzzle: 20-8-5 / 11-5-25 / 9-19 / 3-15-21-18-1-7-5

Cipher 7

How to solve it: Shift letters back by 2 in the alphabet.

Puzzle: Gr ynnqypq ugrf cyaf qcyqml

Cipher 8

How to solve it: Change one letter at a time to reach the goal word.

Puzzle: COLD → _ _ _ _ → GOLD

Cipher 9

How to solve it: Look for a smaller word hidden inside bigger ones.

Puzzle: The mystery hid in every *tinned* can.

Cipher 10

How to solve it: Answer the riddle.

Puzzle: What has keys but opens no doors?



Ages 13-15: Shadow Geekery

Now things get interesting... Your sleuthing skills are growing, and these puzzles demand deeper thinking.

Slow down. Think carefully. Patterns hide in the quiet spaces.

Cipher 1

How to solve it: Use a Pigpen cipher chart to decode symbols into letters.

Puzzle: ☐☐☐☐ > ☐☐

Cipher 2

How to solve it: Convert numbers to letters, then unscramble the second word.

Puzzle: 7-12-15-23 • trahet

Cipher 3

Crack the code: Each number tells you how many letters to move forward in the alphabet from the letter next to it. Write down the new letters to find the hidden word.

Letter	Number
P	+3
J	+3
F	+3
I	+3
B	+3

Cipher 4

How to solve it: Write every third letter starting at the first. (Hint, the sentence is longer than necessary!)

Puzzle: This example always makes wise observers realize knowledge matters.

Cipher 5

How to solve it: Use phone keypad to decode numbers.

Hints: A space means a new word – example: 7777 = S (7 = PQRS, 4th letter)

Puzzle: 7777 555 33 88 44 8 7777
 7777 666 555 88 33
 2 555 555
 7 777 666 222 555 33 444 7777

Cipher 6

How to solve it: Follow directions across a 5x5 alphabet grid starting at M.

R = right, L = left, U = up, D = down

After each group of directions, write down the letter you land on

Step 1: The first letter is given

After each group of directions, write down the letter you land on

Puzzle: H – U U R R – D D L L L – D L – U U R R R – D – U L L

Cipher 7

How to solve it: Translate emojis into meaning words.

Puzzle: 🌳 🌈 ☂️ 😊 🐯

Cipher 8

How to solve it: Use the Atbash cipher to get the message.

Puzzle: Dv xzm hloe gsrh!

Cipher 9

How to solve it: Find repeating smaller words hidden inside larger ones to get the message.

Puzzle: A helpful, helpless teacher, reaching, another, otherworldly question.

Cipher 10

How to solve it: Reverse the entire line to read correctly.

Puzzle: tltuobanraelewfiyretsymasignlhton



Ages 16-18: Master Gleuths

Welcome to the inner circle. These puzzles are used by those who guard secrets and walk between worlds.

Some may feel impossible at first. **Step back. Breathe. Try again.**

Mysteries reward resilience.

Cipher 1

How to solve it: Convert binary to letters using ASCII codes.

Puzzle: 01001101 01111001 01110011 01110100 01100101 01110010 01111001

Cipher 2

How to solve it: Replace each letter with its opposite in the alphabet.

Puzzle: DV ZIV HGILMTVI GLTVGSVI.

Cipher 3

How to solve it: Decode using the Atbash cipher, then check for reversed words.

Puzzle: Hvxivgh ziv gsv pvb

Cipher 4

How to solve it: Use Rail Fence method with 3 rails to reorder letters.

Puzzle: AETTSTHRNMRSUYE

Hint:

```
A   S           D   A   T   H
  I T R H L S M N   R T S
    S   E   O           Y   U
```

Cipher 5

How to solve it: Translate alchemical symbols into elements, then take initials.

Puzzle: 

Cipher 6

How to solve it: Shift letters back using a repeated pattern of -1, -2, -3.

Puzzle: Jgnnq Vjku ku c ugect.

Cipher 7

How to solve it: Match the runes to modern letters.

Puzzle: BMMNMPM IT AADRHMTP

Cipher 8

How to solve it: Decode using Playfair cipher with the key PARTHENOPE.

Puzzle: RMGM XR SXDL

Cipher 9

How to solve it: Read the last word of each line to reveal a message.

Puzzle: Flickering candles teach the eyes to look
Shadows laugh softly from places just behind,
Truth waits patiently, thinner than the
Silence which breaks when you open the door

Cipher 10

Puzzle: The Rule Is Hidden

Below is a list of numbers. Each number matches a letter using A = 1, B = 2, C = 3, and so on.

But be careful — not every number matters.

17 21 5 19 20 9 15 14

5 22 5 18 25 20 8 9 14 7

Hint: Some letters form a word that tells you what to do.
The rest form the message



Facilitator Answer Key

Easy (10-12)

1. Be brave be true
2. why should you always read the book
3. MAGIC
4. YOU CAN FIND A WAY
5. Detective (or sleuth) wants pizza / Where's the pizza?
6. THE KEY IS COURAGE
7. It appears with each season
8. COLD → CORD → GOLD
9. TIN
10. A piano

Medium (13-15)





1. MEET ME
2. GLOW / HEART
3. SMILE
4. TEAMWORK
5. SLEUTHS SOLVE ALL PROBLEMS
6. H (given)
U U R R → E
D D L L L → L
D L → P
U U R R R → I
D → N
U L L → G

HELPING
7. TRUST
8. WE CAN SOLVE THIS!
9. HELP EACH OTHER
10. Nothing is a mystery if we learn about it.



Hard (16-18)

1. MYSTERY
2. DV → WE
ZIV → ARE
HGILMTVI → STRONGER
GLTVGSVI → TOGETHER
3. SECRETS ARE THE KEY
4. A SISTER HOLDS MANY TRUTHS
5. AQUA

Symbol	Alchemical Meaning	Cipher Letter
	Water	A
	Mercury (Quicksilver)	Q
	Fire (used here as “heat / rising vapor” – Fire causes water to rise / evaporate , often encoded as U (up))	U
	Water	A

6. HELLO THIS IS A SECRET
7. BELIEVE IN YOURSELF
8. MEET AT NIGHT
9. Look behind the door.
10. QUESTION EVERYTHING

