

Coding and decoding: full practice bank: open practice pack

100 untimed questions across 10 authored sections.

Detail	Value
Pack	cognitive-skills-coding-decoding
Source	cognitive-skills
Pack version	v1
Worksheet items	100
Authored hints	0
Worked explanations	100

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Learner worksheet

Coding and decoding is the skill of spotting the rule that turns a word into a code, then applying it in reverse. One hundred items in ten themed sections, each one self-contained: every rule you need is stated in the question itself. Work untimed and write the alphabet out beside you at first; recognising the common rule families is what builds speed later.

Choose one answer for each item. For a delayed-recall item, read its study text, cover it, and then answer without looking back.

Letter positions and number codes

Warm up with the most common code of all: each letter stands for its place in the alphabet, so A is 1 and Z is 26.

1. coding-decoding-s01-q01

In a code, each letter is replaced by its position in the alphabet, so A is 1 and B is 2. What number stands for the letter G?

- A. 5
- B. 6
- C. 7
- D. 8

Your answer: _____

2. coding-decoding-s01-q02

In a code where A is 1 and Z is 26, which letter is written as the number 12?

- A. K

- B. L
- C. M
- D. N

Your answer: _____

3. coding-decoding-s01-q03

In a code, each letter is replaced by its alphabet position, so CAB is written 3-1-2. How is BAD written?

- A. 2-1-4
- B. 2-1-3
- C. 1-2-4
- D. 4-1-2

Your answer: _____

4. coding-decoding-s01-q04

In a code, DOG is written 4-15-7 because each letter is replaced by its alphabet position. How is COW written?

- A. 3-15-22
- B. 3-14-23
- C. 3-15-23
- D. 3-15-24

Your answer: _____

5. coding-decoding-s01-q05

In a code where each letter is replaced by its alphabet position, which word is written 19-21-14?

- A. SIN
- B. SUN
- C. RUN
- D. SON

Your answer: _____

6. coding-decoding-s01-q06

In a code, letters are replaced by their alphabet positions, so M is written 13. Which letter is written 20?

- A. S
- B. T
- C. U
- D. V

Your answer: _____

7. coding-decoding-s01-q07

In a code, a word is written as the total of its letters' alphabet positions. What number stands for the word CAB?

- A. 6
- B. 7
- C. 8
- D. 9

Your answer: _____

8. coding-decoding-s01-q08

In a code, ACE is written 1-3-5 because each letter is replaced by its alphabet position. Which word is written 2-4-6?

- A. BCF
- B. BDG
- C. ACF
- D. BDF

Your answer: _____

9. coding-decoding-s01-q09

In a code, letters are replaced by their alphabet positions. Which letter has a position number exactly double that of D?

- A. G
- B. H
- C. I
- D. J

Your answer: _____

10. coding-decoding-s01-q10

In a code, TEN is written 20-5-14 because each letter is replaced by its alphabet position. Which word is written 20-5-1?

- A. ATE
- B. EAT
- C. NET
- D. TEA

Your answer: _____

Shifting letters forward and back

Shift codes replace every letter with one a fixed number of places away. Watch what happens at the ends of the alphabet, where counting wraps around.

11. coding-decoding-s02-q01

In a code, every letter is replaced by the letter one place later in the alphabet. How is CAT written?

- A. DBU
- B. BZS
- C. CBU
- D. DAU

Your answer: _____

12. coding-decoding-s02-q02

In a code, every letter is replaced by the letter one place later in the alphabet. How is DOG written?

- A. EOH
- B. EPG
- C. EPH
- D. CNF

Your answer: _____

13. coding-decoding-s02-q03

In a code, every letter is replaced by the letter two places later in the alphabet. How is BAT written?

- A. DCV
- B. CBU
- C. DBV
- D. DCU

Your answer: _____

14. coding-decoding-s02-q04

In a code, every letter is replaced by the letter one place earlier in the alphabet. How is SUN written?

- A. TVO
- B. RTM
- C. RUM
- D. RTN

Your answer: _____

15. coding-decoding-s02-q05

In a code, every letter is replaced by the letter two places earlier in the alphabet. How is FOG written?

- A. EMF
- B. DMF
- C. DNE
- D. DME

Your answer: _____

16. coding-decoding-s02-q06

In a code, PEN is written QFO. Using the same rule, how is CUP written?

- A. DVQ
- B. BTO
- C. DUQ
- D. DVP

Your answer: _____

17. coding-decoding-s02-q07

In a code, TIME is written SHLD. Using the same rule, how is DAY written?

- A. EBZ
- B. CZX
- C. CAX
- D. DZX

Your answer: _____

18. coding-decoding-s02-q08

In a code, every letter is replaced by the letter one place later in the alphabet, and the alphabet is treated as a loop so Z becomes A. How is ZOO written?

- A. YNN
- B. AOO
- C. APP
- D. APO

Your answer: _____

19. coding-decoding-s02-q09

In a code, every letter is replaced by the letter three places later in the alphabet. How is CAB written?

- A. EDC
- B. FDE
- C. FCE
- D. GED

Your answer: _____

20. coding-decoding-s02-q10

A word was coded by moving each of its letters four places later in the alphabet, producing GEX. What was the original word?

- A. BAT
- B. CAT
- C. COT
- D. CAP

Your answer: _____

Reversal and mirror codes

Two related families here: reversing the order of letters, and mirroring the alphabet so A pairs with Z. Decide which one is at work before you answer.

21. coding-decoding-s03-q01

In a code, every word is written with its letters in reverse order. How is DESK written?

- A. SKED
- B. KSDE

- C. EDSK
- D. KSED

Your answer: _____

22. coding-decoding-s03-q02

In a code, LEMON is written NOMEL because the letters are reversed. How is APPLE written?

- A. ELPPA
- B. ELPAP
- C. EPLPA
- D. APPEL

Your answer: _____

23. coding-decoding-s03-q03

In a code, each word of a phrase is reversed but the words stay in their original order. How is OPEN DOOR written?

- A. ROOD NEPO
- B. NEPO DOOR
- C. NEPO ROOD
- D. NOPE ROOD

Your answer: _____

24. coding-decoding-s03-q04

In a code, GO HOME is written EMOH OG because the whole phrase, words included, is written backwards. How is SIT DOWN written?

- A. TIS NWOD
- B. NWOD TIS
- C. TIS DOWN
- D. NWOD SIT

Your answer: _____

25. coding-decoding-s03-q05

In a mirror code, A is written Z, B is written Y, and so on down the alphabet. How is the letter C written?

- A. V
- B. W
- C. X
- D. Y

Your answer: _____

26. coding-decoding-s03-q06

In a mirror code where A is written Z and B is written Y, how is the word CAB written?

- A. XYZ

- B. ZXY
- C. YZX
- D. XZY

Your answer: _____

27. coding-decoding-s03-q07

In a mirror code where A is written Z, B is written Y, and so on, how is the word ZOO written?

- A. AKK
- B. BLL
- C. ALL
- D. ALK

Your answer: _____

28. coding-decoding-s03-q08

In a mirror code where A is written Z, B is written Y, and so on, which word is written TLLW?

- A. FOOD
- B. GOLD
- C. WOOD
- D. GOOD

Your answer: _____

29. coding-decoding-s03-q09

In a code, STOP is written TSPO because the letters are swapped in pairs. How is CARD written?

- A. ACRD
- B. CADR
- C. ACDR
- D. DRAC

Your answer: _____

30. coding-decoding-s03-q10

In a code, HORSE is written ESROH because the letters are reversed. Which word is written TFARC?

- A. FRACT
- B. CRAFT
- C. CARFT
- D. TRACE

Your answer: _____

Rearranged-letter codes

These codes keep every letter but move it somewhere else. Work out exactly which positions travel where before applying the rule.

31. coding-decoding-s04-q01

In a code, DEAR is written EDRA because neighbouring letters are swapped in pairs. How is FISH written?

- A. IFSH
- B. FIHS
- C. HSIF
- D. IFHS

Your answer: _____

32. coding-decoding-s04-q02

In a code, CHAIR is written RHAIC because the first and last letters change places. How is TABLE written?

- A. EABLT
- B. ELBAT
- C. EABTL
- D. TABEL

Your answer: _____

33. coding-decoding-s04-q03

In a code, MONEY is written ONEYM because the first letter moves to the end. How is PAPER written?

- A. REPAP
- B. PAPRE
- C. APERP
- D. APEPR

Your answer: _____

34. coding-decoding-s04-q04

In a code, GARDEN is written NGARDE because the last letter moves to the front. How is PENCIL written?

- A. ENCILP
- B. LICNEP
- C. PENCLI
- D. LPENCI

Your answer: _____

35. coding-decoding-s04-q05

In a code, TIME is written METI because the last two letters move to the front. How is CARD written?

- A. DRAC
- B. RDCA
- C. RDAC
- D. ARCD

Your answer: _____

36. coding-decoding-s04-q06

In a code, the letters of a four-letter word are rewritten in the order second, first, fourth, third. How is LAMP written?

- A. ALMP
- B. LAPM
- C. ALPM
- D. PMAL

Your answer: _____

37. coding-decoding-s04-q07

In a code, BOOK is written OKBO because the first two letters move to the end. How is DESK written?

- A. KSED
- B. SKED
- C. EDKS
- D. SKDE

Your answer: _____

38. coding-decoding-s04-q08

In a code, every word is rewritten with its letters in alphabetical order. How is CHAIR written?

- A. ACHRI
- B. ACHIR
- C. AICHR
- D. RIAHC

Your answer: _____

39. coding-decoding-s04-q09

In a code, the middle letter of a five-letter word is moved to the front and the rest keep their order. How is BRAIN written?

- A. ABRNI
- B. ARBIN
- C. ABRIN
- D. NIARB

Your answer: _____

40. coding-decoding-s04-q10

In a code, a six-letter word is written with its two halves swapped. How is GARDEN written?

- A. NEDRAG
- B. DENGAR
- C. DENRAG
- D. RAGNED

Your answer: _____

Working out the rule from an example

Now the rule is not stated. Compare the example word with its code letter by letter, name the rule, then apply it.

41. coding-decoding-s05-q01

In a code, MOON is written NPPO. Using the same rule, how is STAR written?

- A. SUBS
- B. TUBS
- C. TUAS
- D. RSZQ

Your answer: _____

42. coding-decoding-s05-q02

In a code, HAND is written IBOE. Using the same rule, which word is written CMPX?

- A. GLOW
- B. CLAW
- C. BLOW
- D. BLEW

Your answer: _____

43. coding-decoding-s05-q03

In a code, FLOWER is written GMPXFS. Using the same rule, how is GARDEN written?

- A. HBSDFO
- B. FZQCDM
- C. HBRDFO
- D. HBSEFO

Your answer: _____

44. coding-decoding-s05-q04

In a code, CAT is written 3-1-20. Using the same rule, how is TAP written?

- A. 20-1-15
- B. 20-1-16
- C. 19-1-16
- D. 16-1-20

Your answer: _____

45. coding-decoding-s05-q05

In a code, BOX is written YLC. Using the same rule, how is CAP written?

- A. XAK
- B. ZXK
- C. XZK
- D. XZL

Your answer: _____

46. coding-decoding-s05-q06

In a code, ONE is written 15-14-5 and TWO is written 20-23-15. Using the same rule, how is SIX written?

- A. 19-9-24
- B. 18-9-24
- C. 19-8-24
- D. 19-9-23

Your answer: _____

47. coding-decoding-s05-q07

In a code, a word is written as a single number, and RED is written 27. Using the same rule, how is BED written?

- A. 11
- B. 12
- C. 13
- D. 14

Your answer: _____

48. coding-decoding-s05-q08

In a code, SUN is written TWQ. Using the same rule, how is DAY written?

- A. EBA
- B. ECB
- C. ECA
- D. EDB

Your answer: _____

49. coding-decoding-s05-q09

In a code, FOUR is written EMRN. Using the same rule, how is FIVE written?

- A. EGRA
- B. EHSA
- C. EGSB
- D. EGSA

Your answer: _____

50. coding-decoding-s05-q10

In a code, LAMP is written 12-1-13-16. Using the same rule, which word is written 4-9-19-8?

- A. DASH
- B. DISH
- C. FISH
- D. DISK

Your answer: _____

Coded language: matching words to meanings

Each item gives short phrases in an invented language. Find the code word that appears in more than one phrase, match it to the meaning those phrases share, and work outwards from there.

51. coding-decoding-s06-q01

In a code language, "tor mel" means "red apple" and "mel dik" means "apple pie". Which code word means "apple"?

- A. mel
- B. tor
- C. dik
- D. It cannot be worked out

Your answer: _____

52. coding-decoding-s06-q02

In a code language, "ral fim" means "cold night" and "fim dop" means "night sky". What does "ral" mean?

- A. night
- B. sky
- C. cold
- D. dark

Your answer: _____

53. coding-decoding-s06-q03

In a code language, "mo ta ku" means "sweet mango juice", "ta si" means "mango tree", and "ku ne" means "juice bar". Which code word means "sweet"?

- A. mo
- B. ta
- C. ku
- D. si

Your answer: _____

54. coding-decoding-s06-q04

In a code language, "pen zol" means "green field", "zol fim" means "field mouse", and "fim rak" means "mouse trap". What is the code for "green trap"?

- A. pen zol
- B. zol rak
- C. pen rak
- D. rak fim

Your answer: _____

55. coding-decoding-s06-q05

In a code language, "lo ka mi" means "fast blue train", "ka su" means "blue sea", and "mi te" means "train station". What does "lo" mean?

- A. blue
- B. train
- C. station
- D. fast

Your answer: _____

56. coding-decoding-s06-q06

In a code language, "sun" is "ora", "rises" is "tam", and "early" is "vek". Keeping the same word order, how would "sun rises early" be written?

- A. ora vek tam
- B. tam ora vek
- C. ora tam vek
- D. vek tam ora

Your answer: _____

57. coding-decoding-s06-q07

In a code language, "fa lo mi" means "birds fly south", "mi ru" means "south wind", and "lo pen" means "fly high". Which code word means "birds"?

- A. lo
- B. mi
- C. fa
- D. ru

Your answer: _____

58. coding-decoding-s06-q08

In a code language, "tin ko sa" means "buy fresh bread", "sa lem" means "bread shop", and "ko dor" means "fresh fruit". Which code word means "buy"?

- A. tin
- B. ko
- C. sa
- D. lem

Your answer: _____

59. coding-decoding-s06-q09

In a code language, "ze bo" means "night sky", "bo fa" means "sky blue", and "fa ze" means "blue night". Which code word means "sky"?

- A. ze
- B. bo
- C. fa

- D. It cannot be worked out

Your answer: _____

60. coding-decoding-s06-q10

In a code language, "mek tor sil pa" means "we play games daily", "sil ken" means "games room", "pa nod" means "daily paper", and "tor lim" means "play area". Which code word means "we"?

- A. tor
- B. sil
- C. pa
- D. mek

Your answer: _____

Number and symbol substitutions

Codes that mix letters, digits, and symbols. Convert carefully in one direction at a time, and note whether any arithmetic is applied after the lookup.

61. coding-decoding-s07-q01

In a code, each letter is replaced by a number one more than its alphabet position, so A is written 2. How is CAB written?

- A. 3-1-2
- B. 2-4-3
- C. 4-1-3
- D. 4-2-3

Your answer: _____

62. coding-decoding-s07-q02

In a code, each letter is replaced by double its alphabet position. How is BAD written?

- A. 2-1-4
- B. 4-2-6
- C. 4-2-8
- D. 8-2-4

Your answer: _____

63. coding-decoding-s07-q03

In a code, a word is written as the total of its letters' alphabet positions. What number stands for the word BAG?

- A. 8
- B. 9
- C. 10
- D. 11

Your answer: _____

64. coding-decoding-s07-q04

In a code, the digits are replaced by letters as follows: 1 is P, 2 is Q, 3 is R, 4 is S, and 5 is T. How is the number 3514 written?

- A. RTPS
- B. RPTS
- C. RTSP
- D. PRTS

Your answer: _____

65. coding-decoding-s07-q05

In a code, the digits are replaced by letters as follows: 1 is P, 2 is Q, 3 is R, 4 is S, and 5 is T. Which number is written TQPR?

- A. 5231
- B. 2513
- C. 5123
- D. 5213

Your answer: _____

66. coding-decoding-s07-q06

In a code, each letter is replaced by its alphabet position multiplied by 2, with 1 then subtracted, so A is written 1 and B is written 3. How is DAD written?

- A. 7-1-7
- B. 8-2-8
- C. 7-2-7
- D. 4-1-4

Your answer: _____

67. coding-decoding-s07-q07

In a code, the symbol # stands for A, * stands for E, and @ stands for I, while every other letter is written as usual. How is the word BEAD written?

- A. B#*D
- B. B*@D
- C. B*#D
- D. BE#D

Your answer: _____

68. coding-decoding-s07-q08

In a code, each letter is replaced by the alphabet position of the letter that follows it, so A is written 2. How is CAT written?

- A. 3-1-20
- B. 2-0-19
- C. 4-2-20

- D. 4-2-21

Your answer: _____

69. coding-decoding-s07-q09

In a code, a word is written as the total of its letters' alphabet positions, and SEA is written 25. Which of these words is also written 25?

- A. CAT
- B. TEA
- C. LID
- D. BED

Your answer: _____

70. coding-decoding-s07-q10

In a code, each letter is replaced by the number of the position it holds counting backwards from Z, so Z is written 1 and Y is written 2. How is BAD written?

- A. 2-1-4
- B. 24-26-23
- C. 25-26-24
- D. 25-26-23

Your answer: _____

Conditional coding rules

Here the rule applies only to certain letters or in certain conditions. Sort the letters into the cases first, then code each case correctly.

71. coding-decoding-s08-q01

In a code, every vowel is replaced by the next letter of the alphabet and every consonant is left unchanged. How is TABLE written?

- A. TBBLF
- B. TABLF
- C. TBBLE
- D. UBCMF

Your answer: _____

72. coding-decoding-s08-q02

In a code, every vowel is replaced by the next letter of the alphabet and every consonant is left unchanged. How is MUSIC written?

- A. MVSIC
- B. MUSJC
- C. MVSJC
- D. NVTJD

Your answer: _____

73. coding-decoding-s08-q03

In a code, every consonant is replaced by the letter before it in the alphabet and every vowel is left unchanged. How is FACE written?

- A. EABE
- B. EABD
- C. FBCD
- D. EACE

Your answer: _____

74. coding-decoding-s08-q04

In a code, a word is reversed if it has an even number of letters and left unchanged if it has an odd number. How is the pair HAND and CAT written?

- A. DNAH, TAC
- B. HAND, TAC
- C. DNAH, CAT
- D. HAND, CAT

Your answer: _____

75. coding-decoding-s08-q05

In a code, any letter that appears more than once in a word is replaced by a star wherever it appears, and all other letters stay as they are. How is LETTER written?

- A. L****R
- B. LE**ER
- C. L*TT*R
- D. LETTER

Your answer: _____

76. coding-decoding-s08-q06

In a code, every vowel is replaced by its alphabet position number and every consonant is left unchanged. How is HEAD written?

- A. H5AD
- B. 851D
- C. H15D
- D. H51D

Your answer: _____

77. coding-decoding-s08-q07

In a code, a word is written backwards and the letter S is then added at the end. How is DREAM written?

- A. MAERD
- B. MAERDS
- C. SMAERD
- D. DREAMS

Your answer: _____

78. coding-decoding-s08-q08

In a code, letters in odd positions move one place forward in the alphabet and letters in even positions move one place back. How is CODE written?

- A. DPEF
- B. BPCF
- C. DNED
- D. DNEF

Your answer: _____

79. coding-decoding-s08-q09

In a code, a word that starts with a vowel is reversed, while a word that starts with a consonant has only its first and last letters swapped. How are OPEN and DESK written?

- A. NEPO, KESD
- B. OPEN, KESD
- C. NEPO, DESK
- D. NEPO, KSED

Your answer: _____

80. coding-decoding-s08-q10

In a code, every third letter of a word is dropped and the remaining letters keep their order. How is CALENDAR written?

- A. CALEDA
- B. CAENAR
- C. CAENDR
- D. CAELNR

Your answer: _____

Two-step codes

Each code here applies two operations one after the other. Do them strictly in the order stated, and when decoding, undo them in the opposite order.

81. coding-decoding-s09-q01

In a code, a word is first written backwards and then every letter moves one place forward in the alphabet. How is CAT written?

- A. UBD
- B. DBU
- C. UAD
- D. TAC

Your answer: _____

82. coding-decoding-s09-q02

In a code, every letter first moves one place back in the alphabet and the word is then written backwards. How is DOG written?

- A. CNF
- B. FNC
- C. EPH
- D. HPE

Your answer: _____

83. coding-decoding-s09-q03

In a code, every letter is first replaced by its mirror letter, so A becomes Z and B becomes Y, and the word is then written backwards. How is CAB written?

- A. XZY
- B. BAC
- C. ZYX
- D. YZX

Your answer: _____

84. coding-decoding-s09-q04

In a code, every letter first moves two places forward in the alphabet and the first and last letters of the result are then swapped. How is LAMP written?

- A. RCON
- B. NCOR
- C. ROCN
- D. PMAL

Your answer: _____

85. coding-decoding-s09-q05

In a code, the vowels of a word first move one place forward in the alphabet and the whole word is then written backwards. How is RAIN written?

- A. RBJN
- B. NJBR
- C. NIAR
- D. NJBS

Your answer: _____

86. coding-decoding-s09-q06

In a code, a word is first written backwards and each letter is then replaced by its alphabet position. How is BAD written?

- A. 2-1-4
- B. 4-2-1
- C. 1-4-2

- D. 4-1-2

Your answer: _____

87. coding-decoding-s09-q07

In a code, every letter first moves three places forward in the alphabet and the result is then written backwards. How is BOX written?

- A. ERA
- B. XOB
- C. ARE
- D. AER

Your answer: _____

88. coding-decoding-s09-q08

In a code, the first two letters of a four-letter word are first moved to the end and every letter then moves one place back in the alphabet. How is DESK written?

- A. RJCD
- B. SKDE
- C. CDRJ
- D. RJDC

Your answer: _____

89. coding-decoding-s09-q09

In a code, every vowel is first replaced by its alphabet position number and the whole word is then written backwards. How is FACE written?

- A. F1C5
- B. 5C1F
- C. 5C1E
- D. ECAF

Your answer: _____

90. coding-decoding-s09-q10

A word was coded by moving each letter two places forward in the alphabet and then writing the result backwards, producing RCO. What was the original word?

- A. PAM
- B. MAT
- C. CAP
- D. MAP

Your answer: _____

Breaking codes and advanced patterns

The hardest section: keyword alphabets, grid references, and codes you must break from a single worked example before you can use them.

91. coding-decoding-s10-q01

A code alphabet is built by writing the keyword MUSIC first and then the unused letters in their normal order, giving M, U, S, I, C, A, B, D, E and so on. The plain letter A is coded as the first letter of this new alphabet, B as the second, and so on. How is BAD written?

- A. UMI
- B. MUI
- C. UMS
- D. IMU

Your answer: _____

92. coding-decoding-s10-q02

A code alphabet is built by writing the keyword MUSIC first and then the unused letters in their normal order, giving M, U, S, I, C, A, B, D, E and so on, with the plain letter A coded as the first entry, B as the second, and so on. Which word is written SMU?

- A. ABC
- B. BAC
- C. CBA
- D. CAB

Your answer: _____

93. coding-decoding-s10-q03

In a code, the letters are set out in a five-column grid, row by row: A B C D E, then F G H I J, then K L M N O, then P Q R S T, then U V W X Y, with Z left out. Each letter is written as its row number followed by its column number, so H is 23. How is CAB written?

- A. 11-12-13
- B. 13-11-12
- C. 31-11-21
- D. 13-12-11

Your answer: _____

94. coding-decoding-s10-q04

In a code, the letters are set out in a five-column grid, row by row: A B C D E, then F G H I J, then K L M N O, then P Q R S T, then U V W X Y, with Z left out, and each letter is written as its row number followed by its column number. Which word is written 45-15-11-33?

- A. TEAM
- B. MEAT
- C. TAME
- D. MATE

Your answer: _____

95. coding-decoding-s10-q05

A message was coded by moving every letter the same number of places forward in the alphabet, and ZEBRA became DIFVE. How many places was each letter moved?

- A. 2
- B. 3
- C. 4
- D. 5

Your answer: _____

96. coding-decoding-s10-q06

A message was coded by moving every letter four places forward in the alphabet. Which word was coded as QSRXL?

- A. MONEY
- B. MOUTH
- C. MOTHS
- D. MONTH

Your answer: _____

97. coding-decoding-s10-q07

In a code, each letter is replaced by the alphabet position of the letter two places after it, so A is written 3. Which word is written 5-3-22?

- A. EAT
- B. CAT
- C. CAR
- D. ACT

Your answer: _____

98. coding-decoding-s10-q08

In a code, a word is written as a single number: the alphabet positions of its letters are added together and the total is then multiplied by the number of letters. What number stands for FIG?

- A. 66
- B. 69
- C. 72
- D. 75

Your answer: _____

99. coding-decoding-s10-q09

In a code, LIME is written NKOG and PEAR is written RGCT. Using the same rule, how is FISH written?

- A. HKSJ
- B. HJUJ
- C. GJTI
- D. HKUJ

Your answer: _____

100. coding-decoding-s10-q10

A word was coded by moving each letter three places back in the alphabet and then writing the result backwards, producing BZX. What was the original word?

- A. AXE
- B. ACE
- C. ICE
- D. EAT

Your answer: _____

Authored hints

This cognitive practice source does not publish authored hints. Every item is listed as missing a hint, and no hint text is generated or inferred.

100 worksheet items do not have an authored hint. No hint text was generated for them.

Answer key

The answer key and worked explanations in this file belong only to this public, untimed educational practice source. No active aptitude suite or Novus Reasoning Challenge answer key is ever included in any download.

Coding and decoding: full practice bank: open practice pack answer key

Item	Choice	Answer
coding-decoding-s01-q01	C	7
coding-decoding-s01-q02	B	L
coding-decoding-s01-q03	A	2-1-4
coding-decoding-s01-q04	C	3-15-23
coding-decoding-s01-q05	B	SUN
coding-decoding-s01-q06	B	T
coding-decoding-s01-q07	A	6
coding-decoding-s01-q08	D	BDF
coding-decoding-s01-q09	B	H
coding-decoding-s01-q10	D	TEA
coding-decoding-s02-q01	A	DBU
coding-decoding-s02-q02	C	EPH
coding-decoding-s02-q03	A	DCV
coding-decoding-s02-q04	B	RTM
coding-decoding-s02-q05	D	DME
coding-decoding-s02-q06	A	DVQ
coding-decoding-s02-q07	B	CZX
coding-decoding-s02-q08	C	APP
coding-decoding-s02-q09	B	FDE
coding-decoding-s02-q10	B	CAT

coding-decoding-s03-q01	D	KSED
coding-decoding-s03-q02	A	ELPPA
coding-decoding-s03-q03	C	NEPO ROOD
coding-decoding-s03-q04	B	NWOD TIS
coding-decoding-s03-q05	C	X
coding-decoding-s03-q06	D	XZY
coding-decoding-s03-q07	C	ALL
coding-decoding-s03-q08	D	GOOD
coding-decoding-s03-q09	C	ACDR
coding-decoding-s03-q10	B	CRAFT
coding-decoding-s04-q01	D	IFHS
coding-decoding-s04-q02	A	EABLT
coding-decoding-s04-q03	C	APERP
coding-decoding-s04-q04	D	LPENCI
coding-decoding-s04-q05	B	RDCA
coding-decoding-s04-q06	C	ALPM
coding-decoding-s04-q07	D	SKDE
coding-decoding-s04-q08	B	ACHIR
coding-decoding-s04-q09	C	ABRIN
coding-decoding-s04-q10	B	DENGAR
coding-decoding-s05-q01	B	TUBS
coding-decoding-s05-q02	C	BLOW
coding-decoding-s05-q03	D	HBSEFO
coding-decoding-s05-q04	B	20-1-16
coding-decoding-s05-q05	C	XZK
coding-decoding-s05-q06	A	19-9-24
coding-decoding-s05-q07	A	11
coding-decoding-s05-q08	B	ECB
coding-decoding-s05-q09	D	EGSA
coding-decoding-s05-q10	B	DISH
coding-decoding-s06-q01	A	mel
coding-decoding-s06-q02	C	cold
coding-decoding-s06-q03	A	mo
coding-decoding-s06-q04	C	pen rak
coding-decoding-s06-q05	D	fast
coding-decoding-s06-q06	C	ora tam vek
coding-decoding-s06-q07	C	fa
coding-decoding-s06-q08	A	tin
coding-decoding-s06-q09	B	bo
coding-decoding-s06-q10	D	mek

coding-decoding-s07-q01	D	4-2-3
coding-decoding-s07-q02	C	4-2-8
coding-decoding-s07-q03	C	10
coding-decoding-s07-q04	A	RTPS
coding-decoding-s07-q05	D	5213
coding-decoding-s07-q06	A	7-1-7
coding-decoding-s07-q07	C	B*#D
coding-decoding-s07-q08	D	4-2-21
coding-decoding-s07-q09	C	LID
coding-decoding-s07-q10	D	25-26-23
coding-decoding-s08-q01	A	TBBLF
coding-decoding-s08-q02	C	MVSJC
coding-decoding-s08-q03	A	EABE
coding-decoding-s08-q04	C	DNAH, CAT
coding-decoding-s08-q05	A	L****R
coding-decoding-s08-q06	D	H51D
coding-decoding-s08-q07	B	MAERDS
coding-decoding-s08-q08	C	DNED
coding-decoding-s08-q09	A	NEPO, KESD
coding-decoding-s08-q10	B	CAENAR
coding-decoding-s09-q01	A	UBD
coding-decoding-s09-q02	B	FNC
coding-decoding-s09-q03	D	YZX
coding-decoding-s09-q04	A	RCON
coding-decoding-s09-q05	B	NJBR
coding-decoding-s09-q06	D	4-1-2
coding-decoding-s09-q07	C	ARE
coding-decoding-s09-q08	A	RJCD
coding-decoding-s09-q09	B	5C1F
coding-decoding-s09-q10	D	MAP
coding-decoding-s10-q01	A	UMI
coding-decoding-s10-q02	D	CAB
coding-decoding-s10-q03	B	13-11-12
coding-decoding-s10-q04	A	TEAM
coding-decoding-s10-q05	C	4
coding-decoding-s10-q06	D	MONTH
coding-decoding-s10-q07	B	CAT
coding-decoding-s10-q08	A	66
coding-decoding-s10-q09	D	HKUJ
coding-decoding-s10-q10	B	ACE

Worked explanations

coding-decoding-s01-q01: Count forward from the start of the alphabet: A, B, C, D, E, F, G. G is the seventh letter, so its code is 7.

coding-decoding-s01-q02: Decoding means counting places rather than letters. The twelfth letter of the alphabet is L, so 12 decodes to L.

coding-decoding-s01-q03: Take the letters in the order they appear and swap each for its position: B is 2, A is 1, and D is 4. Keeping the original order is what stops a code turning into an anagram.

coding-decoding-s01-q04: C is the third letter, O the fifteenth, and W the twenty-third. Letters near the end of the alphabet are the easiest to miscount, so check them against a nearby landmark such as T at 20.

coding-decoding-s01-q05: Convert each number back to a letter: 19 is S, 21 is U, and 14 is N. Decoding is simply the same lookup carried out in the opposite direction.

coding-decoding-s01-q06: Counting on from the landmark you were given is quicker than starting at A: 13 is M, so 14 is N, 15 is O, and stepping on to 20 lands on T.

coding-decoding-s01-q07: Convert first, then add: C is 3, A is 1, and B is 2, giving a total of 6. A summing code loses the order of the letters, so several different words can share one number.

coding-decoding-s01-q08: Decode each number separately: 2 is B, 4 is D, and 6 is F. Noticing that the numbers rise in twos also tells you the letters must skip one place each time.

coding-decoding-s01-q09: Turn the letter into a number, do the arithmetic, then turn it back: D is 4, double 4 is 8, and the eighth letter is H.

coding-decoding-s01-q10: Only the last number has changed, so only the last letter changes: 1 is A, giving TEA. Words made of the same letters in a different order produce the same numbers in a different order.

coding-decoding-s02-q01: Step each letter on by one: C becomes D, A becomes B, and T becomes U. Every letter must move: leaving one unchanged is the most common slip.

coding-decoding-s02-q02: Moving each letter forward once gives E from D, P from O, and H from G. Moving backwards instead would give the wrong direction entirely.

coding-decoding-s02-q03: Count two places on for each letter: B to C to D, A to B to C, and T to U to V. Say the skipped letter aloud so you do not stop a place short.

coding-decoding-s02-q04: Step each letter back by one: S becomes R, U becomes T, and N becomes M. Reading the alphabet backwards for a moment makes this far less error-prone.

coding-decoding-s02-q05: Counting back two places gives D from F, M from O, and E from G. Check each letter separately rather than assuming the pattern of the first one repeats.

coding-decoding-s02-q06: Compare the example letter by letter to find the rule: each letter has moved one place forward. Applying that same single step to CUP gives DVQ.

coding-decoding-s02-q07: The example shows every letter moving one place back. Stepping back from A wraps round to the end of the alphabet, so A becomes Z and the word becomes CZX.

coding-decoding-s02-q08: Z has no later letter, so the loop carries it round to A, while each O steps on to P. Treating the alphabet as a circle is what keeps a shift code working at both ends.

coding-decoding-s02-q09: Counting on three places gives F from C, D from A, and E from B. With larger shifts it helps to count on your fingers rather than eyeballing the jump.

coding-decoding-s02-q10: To decode a shift, run it the other way: move each coded letter four places back, giving C from G, A from E, and T from X.

coding-decoding-s03-q01: Read the word from its last letter to its first: K, S, E, D. Writing the word out and reading it right to left is more reliable than trying to flip it in your head.

coding-decoding-s03-q02: Reversing means the last letter comes first and the first letter comes last, giving E,

L, P, P, A. Repeated letters are easy to lose, so count that the code has as many letters as the original.

coding-decoding-s03-q03: Treat each word as its own small puzzle and leave the word order alone: OPEN reversed is NEPO and DOOR reversed is ROOD.

coding-decoding-s03-q04: Here the reversal runs across the whole phrase, so the last word arrives first and each word is itself reversed. Comparing the example's first coded word with the phrase's last word is what reveals this.

coding-decoding-s03-q05: Pair the alphabet from both ends inwards: the third letter from the start matches the third letter from the end, which is X. A quick check is that the two positions always add up to 27.

coding-decoding-s03-q06: Mirror each letter in turn while keeping the order: C pairs with X, A with Z, and B with Y. The order of the letters is untouched, only their identities change.

coding-decoding-s03-q07: Z sits at the far end, so it mirrors to A, and O at position fifteen mirrors to the twelfth letter, L. Using the rule that paired positions total 27 saves counting the whole alphabet.

coding-decoding-s03-q08: A mirror code undoes itself, so apply the same pairing to the code: T pairs with G, L with O, and W with D. Codes that are their own reverse are quicker to break than shifts.

coding-decoding-s03-q09: Split the word into pairs and turn each pair around on the spot: CA becomes AC and RD becomes DR. This is a local swap, not a full reversal, so the pairs themselves stay in place.

coding-decoding-s03-q10: Reversing is its own undoing, so read the code backwards to recover the word: C, R, A, F, T. If the result is not a real word, you have probably mis-sequenced a middle letter.

coding-decoding-s04-q01: Both pairs must be swapped, not just the first: FI becomes IF and SH becomes HS. Checking the example's second pair is what confirms the rule applies throughout.

coding-decoding-s04-q02: Only the two outer letters move, so the middle of the word is copied across untouched: E arrives at the front and T goes to the end.

coding-decoding-s04-q03: Lift the first letter off, shuffle everything else one place left, then add the lifted letter at the back. The remaining letters keep their relative order.

coding-decoding-s04-q04: This is the mirror image of moving the first letter to the end: the final letter jumps to the front and everything else shifts one place right.

coding-decoding-s04-q05: The block of the last two letters travels as a unit and keeps its internal order, so RD arrives first, followed by CA. Reversing inside the block would be a different rule altogether.

coding-decoding-s04-q06: Number the letters first, then read them off in the order the rule gives: A, L, P, M. Writing the position numbers above the letters makes rules like this almost mechanical.

coding-decoding-s04-q07: Split the word in half and swap the halves without disturbing the letters inside them, so SK comes first and DE follows.

coding-decoding-s04-q08: Sort the letters from earliest to latest in the alphabet: A, C, H, I, R. This code throws away the original order, so many words can share a single code.

coding-decoding-s04-q09: In a five-letter word the middle letter is the third one, so it leaves its place and leads the code while the remaining four follow in their original sequence.

coding-decoding-s04-q10: Cut the word down the middle into two blocks of three and exchange them, keeping each block's letters in order: DEN then GAR. Swapping halves is not the same as reversing the whole word.

coding-decoding-s05-q01: Line the example up letter by letter: every letter has advanced one place. Applying a single forward step to each letter of the new word gives TUBS.

coding-decoding-s05-q02: The example shows a one-place forward shift, so decoding means stepping one place back: C becomes B, M becomes L, P becomes O, and X becomes W.

coding-decoding-s05-q03: Checking two or three letters of the example is enough to identify a one-place forward shift, and longer words simply repeat it. Verify the middle letters too, since that is where a

mis-stepped letter usually hides.

coding-decoding-s05-q04: The example matches each letter to its alphabet position, so the same lookup gives 20 for T, 1 for A, and 16 for P.

coding-decoding-s05-q05: The example letters are not shifted by a fixed amount; each one is paired with the letter the same distance from the opposite end of the alphabet. Mirroring CAP the same way gives XZK.

coding-decoding-s05-q06: Both examples map each letter to its alphabet position, and the shared letter O confirms it by appearing as 15 in each. S is 19, I is 9, and X is 24.

coding-decoding-s05-q07: Test the obvious idea first: the positions 18, 5, and 4 add up to 27, matching the example. Adding 2, 5, and 4 for the new word gives 11.

coding-decoding-s05-q08: The shift is not constant: the first letter moves one place, the second two, and the third three. Applying the same growing shift means the last letter runs past the end of the alphabet and loops round to B.

coding-decoding-s05-q09: Each letter moves backwards by its own position number: one place, then two, then three, then four. The last step loops past the start of the alphabet and lands on A.

coding-decoding-s05-q10: The example is a plain alphabet-position code, so convert the numbers back: 4 is D, 9 is I, 19 is S, and 8 is H. Checking every number rules out the near-misses that differ by a single letter.

coding-decoding-s06-q01: One code word appears in both phrases and one meaning appears in both translations, so they must belong together. That single overlap is the foothold every coded-language puzzle rests on.

coding-decoding-s06-q02: The word shared by both phrases must mean the shared idea of night, which leaves only one meaning for the other word in the first phrase.

coding-decoding-s06-q03: Pin down the words you can: one appears again with mango and another with juice. The word left over in the first phrase must carry the only meaning still unclaimed.

coding-decoding-s06-q04: Chain the overlaps: the first two phrases share field and the last two share mouse, which leaves one word each for green and trap. Coding a new phrase is just looking those two up.

coding-decoding-s06-q05: Two of the three words in the long phrase reappear elsewhere and can be identified from those pairings, so the remaining word takes the remaining meaning by elimination.

coding-decoding-s06-q06: When the dictionary is handed to you, coding is a straight substitution word by word, with the order preserved exactly as the question states.

coding-decoding-s06-q07: Each of the two short phrases shares one word with the long phrase, fixing the meanings of south and fly. Only one word of the long phrase is left unaccounted for.

coding-decoding-s06-q08: Work through the overlaps in turn: one word recurs with bread and another with fresh, so the third word of the opening phrase must be the verb.

coding-decoding-s06-q09: Every word appears in exactly two phrases, so match each word to the meaning those same two phrases share. The word common to the two phrases that both mention sky is the one you want.

coding-decoding-s06-q10: Three of the four words in the long phrase are each pinned down by a short phrase, leaving exactly one word and one meaning unmatched. Elimination is usually faster here than trying to translate every phrase in full.

coding-decoding-s07-q01: Do the lookup first and the arithmetic second: the positions 3, 1, and 2 each gain one to become 4, 2, and 3.

coding-decoding-s07-q02: Convert each letter to its position, then double it: 2 becomes 4, 1 becomes 2, and 4 becomes 8. Doubling a number is not the same as stepping two letters on, so always convert before calculating.

coding-decoding-s07-q03: Convert each letter and add: 2 for B, 1 for A, and 7 for G make 10. Adding the

letters as you convert them is safer than converting all three and then adding.

coding-decoding-s07-q04: Replace the digits one at a time from left to right so the order of the number is preserved: 3, 5, 1, and 4 become R, T, P, and S.

coding-decoding-s07-q05: Read the key backwards to decode: T stands for 5, Q for 2, P for 1, and R for 3, keeping the same left-to-right order.

coding-decoding-s07-q06: Apply the two steps in the order given: the position 4 doubles to 8 and then loses 1 to give 7, while the position 1 doubles to 2 and loses 1 to give 1. Repeated letters must produce repeated numbers, which is a quick way to sanity-check the answer.

coding-decoding-s07-q07: Only the listed vowels are swapped, and each keeps its own place in the word, so the second letter becomes a star and the third a hash. Consonants are copied across unchanged.

coding-decoding-s07-q08: Move one letter along before you look up the number: C leads to D at 4, A leads to B at 2, and T leads to U at 21. This is the same as adding one to each position, but stepping through the letter makes the wrap at the end of the alphabet obvious.

coding-decoding-s07-q09: Total each word in turn and compare: 12, 9, and 4 add up to 25, while the others come to 24, 26, and 11. Summing codes lose so much information that different words often collide.

coding-decoding-s07-q10: Counting backwards means subtracting the ordinary position from 27, so 2 becomes 25, 1 becomes 26, and 4 becomes 23. That subtraction is quicker than counting down from Z each time.

coding-decoding-s08-q01: Mark the vowels before you start, then step only those forward: the second letter becomes B and the last becomes F, while the consonants are copied straight across.

coding-decoding-s08-q02: Both vowels must be treated, not just the first: one steps on to V and the other to J. Missing a later vowel is the usual error in conditional codes.

coding-decoding-s08-q03: This time the vowels are the ones that stay still, so only the first and third letters move back a place, becoming E and B.

coding-decoding-s08-q04: Count the letters before deciding what to do: the four-letter word meets the condition and is reversed, while the three-letter word does not and is copied as it stands.

coding-decoding-s08-q05: Two letters occur twice in this word, and the rule blanks out every copy of them, leaving only the two letters that appear once. Check every position, since a repeat can sit at either end.

coding-decoding-s08-q06: Only the vowels change form, and each keeps its own place, so the second letter becomes 5 and the third becomes 1. The consonants must remain letters, which rules out coding the whole word numerically.

coding-decoding-s08-q07: Carry out the steps strictly in the order given: reverse the letters first, and only then attach the extra letter to the end of what you have written.

coding-decoding-s08-q08: Number the positions before coding, then alternate the direction of each step: forward, back, forward, back. Writing the numbers above the letters keeps the alternation from drifting.

coding-decoding-s08-q09: Test each word against the condition separately: the first begins with a vowel so the whole word turns round, and the second begins with a consonant so only its outer letters trade places.

coding-decoding-s08-q10: Number the eight letters and strike out the third and the sixth, then read what is left in order. Counting in threes across the whole word, rather than restarting after each deletion, is what keeps the positions right.

coding-decoding-s09-q01: Write down the intermediate result rather than trying to hold it in your head: reversing gives T, A, C, and stepping each on gives U, B, D.

coding-decoding-s09-q02: Shift first, which gives C, N, F, and only then reverse the order. Stopping after the first step is the commonest mistake with two-step codes.

coding-decoding-s09-q03: Mirroring the letters gives X, Z, Y, and reversing that order gives Y, Z, X. Doing

the two steps the other way round would produce a different answer, so the stated order matters.

coding-decoding-s09-q04: Shifting each letter two places gives N, C, O, R, and the swap then exchanges the outer two letters of that result. Note that the swap acts on the shifted letters, not the original ones.

coding-decoding-s09-q05: Treat the vowels first, giving R, B, J, N, then reverse that whole string. The consonants never move in the alphabet, but they do change position.

coding-decoding-s09-q06: Reverse the letters to get D, A, B, then convert each to 4, 1, and 2. Converting before reversing would give the same three numbers in the wrong order.

coding-decoding-s09-q07: The shift gives E, R, and A, since the last letter runs off the end of the alphabet and loops round. Reversing that string produces the final code.

coding-decoding-s09-q08: Rearranging first gives S, K, D, E, and stepping each letter back then gives R, J, C, D. Keep the intermediate word visible so the second step is applied to the right order.

coding-decoding-s09-q09: Substituting the vowels gives F, 1, C, 5, and reversing that sequence puts the number from the end at the front. Numbers reverse along with letters because they occupy positions in the string.

coding-decoding-s09-q10: Undo the steps in the opposite order to the one used for coding: read the code backwards to get O, C, R, then move each letter two places back.

coding-decoding-s10-q01: Line the two alphabets up in a row before coding: the second, first, and fourth entries of the keyword alphabet are U, M, and I. Writing the first ten entries out is usually enough for a short word.

coding-decoding-s10-q02: Decoding means asking where each coded letter sits in the keyword alphabet: the third, first, and second entries correspond to the third, first, and second letters of the ordinary alphabet.

coding-decoding-s10-q03: Find each letter's row first and its column second, then write the pair in that order. All three letters sit in the top row, so only the second digit changes.

coding-decoding-s10-q04: Read each pair as a row then a column and look the letter up: the fifth entry of the fourth row, the fifth of the first, the first of the first, and the third of the third. Words made of the same letters produce the same pairs in a different order, so decode every pair before choosing.

coding-decoding-s10-q05: Measure the gap on a letter that does not wrap around, such as the second one, then confirm it on another. The first letter looping from the end of the alphabet back to the start fits the same gap.

coding-decoding-s10-q06: Once the size of a shift is known, decoding is mechanical: move every coded letter four places back. Decoding just the first two letters narrows the field, but check the rest before settling.

coding-decoding-s10-q07: Reverse the arithmetic before the lookup: take two off each number to get 3, 1, and 20, then convert those positions into letters.

coding-decoding-s10-q08: The positions 6, 9, and 7 total 22, and multiplying by the three letters gives 66. Forgetting the second step and answering 22 is the trap this rule is built around.

coding-decoding-s10-q09: Two examples are better than one: both show every letter advancing two places, which rules out a rule that treats vowels differently. Applying that steady two-place step to each letter gives the code.

coding-decoding-s10-q10: Undo the last step first by reading the code backwards to get X, Z, B, then move each letter three places forward, allowing the count to loop past the end of the alphabet.

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