

Spy Games (Solution)

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This puzzle is based on the board game Codenames as clued by the title, flavor text, and general presentation. Each of the eight grids works as games of Codenames:

- There is a five-by-five grid of words or short phrases. These represent codenames of individuals, some of whom are hidden spies.
- There are two teams, blue and red. Some of the cells (cards in the physical board game) are blue spies, and others are red spies.

In the board game, one player on each team plays the role of spymaster. This player provides clues to help their team identify their side's agents. These clues are always a single word, followed by a number to indicate how many cards that clue applies to. In this puzzle, these are represented by the lists of clues and numbers labeled with "Blue" and "Red" with the respective colored backgrounds.

The first step in the puzzle is to "play Codenames," i.e., use the clues to identify the blue and red agents. In this puzzle, each clue generally corresponds semantically to a fairly distinct set. There are two additional structural patterns in this puzzle to notice:

1. Under normal Codenames rules, there are always either 8 blue and 9 red cards, or 9 blue and 8 red cards. In this puzzle, the red clues will always sum to 8 or 9, but the blue clues will sum to more than the appropriate value. This indicates that multiple blue clues must overlap. In fact, the math works out if all blue clues for a grid overlap for a single blue agent. This overlapping card corresponds to the "penguin agents" that "coordinate one side's spy networks" mentioned in the flavor text.
2. The positions of the blue and red agents within each grid are unusually contiguous, in contrast to normal Codenames where they're randomly placed. Inspecting their positions would reveal that they draw out shapes. The blue agents draw a letter, and the red agents draw numbers. Uncovering this insight helps make identifying the blue and red agents easier.

The clue interpretations and solved grids are shown below, with the overlapping penguin agents indicated in a darker blue:

Grid 1

Hobbit	— Tolkien's <i>The Hobbit, or There and Back Again</i>
Orbit	— Orbits in space
Ticketing	— Air travel
Cathedral	— Cathedral architectural elements
Jack	— <i>Jack and the Giant Beanstalk</i>
Traffic	— Types of traffic interchanges

NEUTRAL	ROUNDABOUT	FLYING BUTTRESS	BURGLAR	MOON
FAMILY COW	THANKS	BOARDING PASS	ALMOST	DAPPER
GIANT	STAINED GLASS	LIGHTBULB	GLENN	EVENING
CLOVERLEAF	GAUNTLET	BEANS	SOAPBOX	ROUND TRIP
RIB VAULT	INTERSECTION	MAGIC RING	ECONOMY	DWARVES

Grid 2

Chivalry	— Knights of the Round Table
President	— U.S. presidents
Show	— PBS television shows
Corners	— The "Four Corners" U.S. States
Literature	— Types of literature
Sin	— Seven Deadly Sins

INITIALS	FORD	BARNEY	UTAH	COLORADO
ARTHUR	PIZZA	HOOVER	FOOLISH	PROSE
CLEVELAND	LANCELOT	MISTER ROGERS	POETRY	ENVIOUS
WISHBONE	SYMBOL	ORDINARY	ALLOWANCE	PROUD
GALAHAD	MINERAL	EAVESDROP	ARIZONA	NEW MEXICO

Grid 3

Month — Namesakes of months
Honorific — Latin honorifics for Augustus Caesar
Park — National Parks in Australia
Bread — Types of bread
Square — Words from the Sator Square

OPERA	JANUS	KAKADU	ARE	UMBRELLA
PITA	DIVI FILIUS	WASTREL	NASHVILLE	BANTER
SATOR	PRINCEPS	MARS	FOCACCIA	COLORS
CHALLAH	JUNO	TENET	NAPPING	BRIOCHE
AREPO	GREAT BARRIER	AUGUSTUS	ROTAS	RUN

Grid 4

Milk — Types of milk
Superlative — Words that are superlatives
Zodiac — Sobriquets of Zodiac signs
Central — Statistical central tendencies
Rocket — Names of well-known rockets
Wonder — Seven Wonders of the Ancient World

APEX	OAT	GOAT	ATLAS	MODE
SCORPION	EIGHT	BAFFLING	DELTA	CUBICLE
COCONUT	SERENADE	SANTA	MEAN	SATURN
COW	ONTARIO	INSTINCT	KINDNESS	COLOSSUS
LION	BEST	TWINS	MAUSOLEUM	MEDIAN

Grid 5

City — Cities in Australia
 macOS — Precursor operating systems to macOS
 Naturalist — Nineteenth-century English naturalists
 Baroque — Baroque composers
 Dance — Latin dances

BSD	WALLACE	UNIX	HANDEL	SAMBA
CRYPTEX	BRISBANE	MAMBO	USEFUL	WINNERS
FORGIVE	NEXT STEP	PACHELBEL	VIVALDI	PHOTOGRAPH
ECCENTRIC	DARWIN	SALSA	APPENDICES	BACH
ADELAIDE	BATES	PERTH	BACHATA	UNLESS

Grid 6

Bandmates — Members of the Red Hot Chili Peppers
 Lake — Lakes in Africa
 Masculine — Slang words for men
 Freud — From the three parts of Freud's psychoanalytic theory
 Rodent — Fictional rodents
 Sea — Names of seas

ANTHONY	VICTORIA	DIALS	DREAMS	ID
ALPHA	LUNCH	EDGY	PINKY	ARABIAN
MALAWI	FLEA	JERRY	BILLION	REMY
JOHN	ECHOES	EGO	MICKEY	CASPIAN
CHAD	BRO	GIN	HACKER	ADRIATIC

Grid 7

Award — Culinary awards
 Coach — Coaches from *Ted Lasso*
 Hair — Types of facial hair
 Fiber — Types of natural fibers
 Muscles — Names of muscles
 Pencil — Components of a pencil

PECS	FLAX	GRAPHITE	MICHELIN	WHISKER
JUTE	SPELLING	HAMSTRINGS	LASSO	MICROSCOPE
REGRET	BICEPS	HEMP	WORLD'S 50 BEST	SIDEBURN
OBLIVIOUS	EUROPE	LEAD	KNACK	BEARD
IRONY	OFTEN	ERASER	KENT	LASH

Grid 8

Infraction — Hockey infractions
 Joint — Joints in the human body
 Reef — Reefs in Florida Keys National Marine Sanctuary
 Herb — Types of herbs
 Indy — Attire of Indiana Jones
 Office — Microsoft Office applications

DECIPHER	BULLWHIP	DILL	WORD	FEDORA
RANDOM	EARLY	NEITHER	ULTIMATUM	EXCEL
HIGH STICK	SOMBRERO	SHOULDER	CILANTRO	SMILE
WRIST	ELBOW	CHEECA	LEATHER JACKET	IMAGINE
HOOK	CROSS CHECK	CARYSFORT	OUTLOOK	LEFT

Each grid is also accompanied by a pair of blanks with a blue background labeled "Codename" and "Penguin Identity". These indicate that the real identities of the penguin agents are important to the puzzle.

The blue agents spell out a message **SPECIES■** (with the final square being padding or representing a full stop). This is a clue for finding the penguin agents' real identities: the eight codenames each clue the common name of a species of penguin.

Codename	Identity (Penguin species)
ROUND TRIP	MAGELLANIC
ARTHUR	KING
AUGUSTUS	EMPEROR
GOAT	ROCKHOPPER
DARWIN	GALAPAGOS
CHAD	AFRICAN
BEARD	CHINSTRAP
ELBOW	MACARONI

The final step uses the intercepted transmission accompanying the third grid along with the numbers drawn by the positions of the red agents. The third grid's agent is the EMPEROR, AUGUSTUS. That agent's "predecessor" refers to Julius Caesar, and so the cipher would be the Caesar cipher, also known as the shift cipher. Take the first letter from each penguin agent identity (the species name) and then shift by the number given by the red agents. This spells out the final answer: **SNOWMELT**.

Species	Shift by Red Number	Extract
[M]AGELLANIC	6	S
[K]ING	3	N
[E]MPEROR	10	O
[R]OCKHOPPER	5	W
[G]ALAPAGOS	6	M
[A]FRICAN	4	E
[C]HINSTRAP	9	L
[M]ACARONI	7	T

Construction notes

This puzzle was constructed around the fact that there are a limited number of penguin species (17 or 18, depending on how you classify them), many with pretty interesting names. Having semantic clues for the species names led to the idea of a Codenames-themed puzzle where the codenames can clue the species.

In a real game of Codenames, clues might overlap if a team didn't identify the correct card the first time around. This inspired the idea of using overlapping clued sets to highlight the species codename card as important. One of the challenges in constructing this puzzle was picking species that had good overlapping clue sets. ROUND TRIP for MAGELLANIC was my personal favorite.

In a previous version of the puzzle, the Caesar cipher was actually indicated by the blue cards positioning, spelling SHFTCPHR. In testing, we found that it was difficult to get the aha of realizing that the species codenames were penguin species. It turns out that an entire hunt themed around penguins makes it hard to direct people to think about puzzle mechanics in relation to penguins, even if you mention penguins and real identities very explicitly in flavor text. This led to using SPECIES as the intermediate message from the blue cards instead, and adding the blanks to make it clear that finding the real identities is an important step in the puzzle. Fortunately, AUGUSTUS was already in the puzzle, which gave us a way to indicate the Caesar cipher without it coming completely out of nowhere.