

Welcome to BAPHL 16! As I'm sure you're aware, 16 is a square number, and BAPHL 16 is celebrating squares of all sorts. Accordingly, you will be visiting some of Cambridge's finest squares throughout the day. There will be 16 puzzles for you to solve, with 4 each in Central Square, Inman Square, Kendall Square, and Tech Square.

Each team will receive an itinerary that tells them what order to go when picking up puzzles. In order to avoid congestion at the puzzle sites, we ask that you stick to your itinerary. Each itinerary covers about 3 miles; if walking that far is a problem for you, you may use other forms of transportation as you deem necessary. When you arrive at one of the sites, please check in with a volunteer to receive your puzzles. Please provide your team name, your difficulty level (Casual or Competitive), and what order this site is in your itinerary (1 through 4). **After picking up puzzles from one site, you may visit the next site after you have solved 3 of the individual puzzles from the current site or after an hour has passed, whichever comes first.** Each site's packet also includes a logic puzzle that will be used in one of the metapuzzles. You can choose to solve these logic puzzles at any time; they do not have any hidden answers beyond what the instructions tell you.

BAPHL 16 has two metapuzzles, which use all the answers from the individual puzzles. The first metapuzzle, which is included in this packet, can be solved with no information other than the answers themselves. The answer to the first metapuzzle will tell you where to go to pick up the second and final metapuzzle. **You can pick up the second metapuzzle once you have solved the first metapuzzle, and at least one puzzle from each of the four locations.** Around 5 PM, we will release the location of the second metapuzzle to teams who have not solved the first metapuzzle, and all teams may pick up the second metapuzzle at that point if they wish.

There will be volunteers passing out puzzles at each of the four locations. Volunteers can verify answers to any of the individual puzzles, and may be able to provide hints as well. The point of BAPHL is to have fun; if you are feeling frustrated, please talk to one of the volunteers and they will try to help you with your problem. **If at any point you decide you do not wish to continue, please tell the volunteer at your current location or call GC at (617) 413-0492** so we know not to worry when you haven't checked in to the remaining locations.

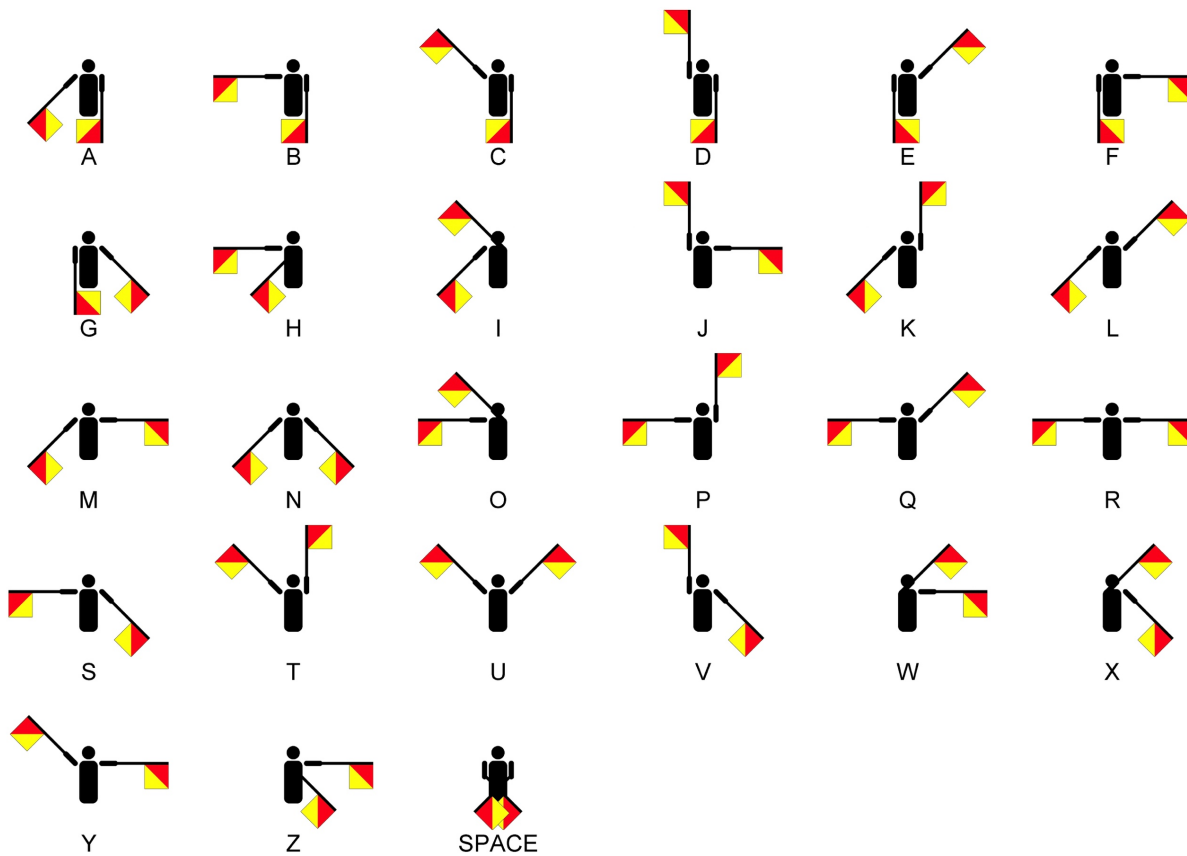
Good luck, and remember: it's hip to be square!

For this first metapuzzle, you won't need anything except for the answers to the 16 individual puzzles. You should be able to put the answers into the grid below based on certain things they have in common. Find out what else the rows and columns have in common to find out where to go to receive the second metapuzzle.

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Letters	Numbers	Binary	NATO	Letters	Numbers	Binary	NATO
A	1	00001	Alfa	Q	17	10001	Quebec
B	2	00010	Bravo	R	18	10010	Romeo
C	3	00011	Charlie	S	19	10011	Sierra
D	4	00100	Delta	T	20	10100	Tango
E	5	00101	Echo	U	21	10101	Uniform
F	6	00110	Foxtrot	V	22	10110	Victor
G	7	00111	Golf	W	23	10111	Whiskey
H	8	01000	Hotel	X	24	11000	X-ray
I	9	01001	India	Y	25	11001	Yankee
J	10	01010	Juliett	Z	26	11010	Zulu
K	11	01011	Kilo		27	11011	
L	12	01100	Lima		28	11100	
M	13	01101	Mike		29	11101	
N	14	01110	November		30	11110	
O	15	01111	Oscar		31	11111	
P	16	10000	Papa				

Flag Semaphore:



Periodic Table of the Elements

1 IA 1A																	18 VIIIA 8A
1 H Hydrogen 1.008	2 IIA 2A											13 IIIA 3A	14 IVA 4A	15 VA 5A	16 VIA 6A	17 VIIA 7A	2 He Helium 4.003
3 Li Lithium 6.941	4 Be Beryllium 9.012											5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180
11 Na Sodium 22.990	12 Mg Magnesium 24.305	3 IIIB 3B	4 IVB 4B	5 VB 5B	6 VIB 6B	7 VIIB 7B	8 VIII 8	9 VIII 8	10 VIII 8	11 IB 1B	12 IIB 2B	13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.867	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.631	33 As Arsenic 74.922	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 83.798
37 Rb Rubidium 85.468	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	42 Mo Molybdenum 95.95	43 Tc Technetium 98.907	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.906	46 Pd Palladium 106.42	47 Ag Silver 107.868	48 Cd Cadmium 112.414	49 In Indium 114.818	50 Sn Tin 118.711	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.904	54 Xe Xenon 131.294
55 Cs Cesium 132.905	56 Ba Barium 137.328	57-71	72 Hf Hafnium 178.49	73 Ta Tantalum 180.948	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.217	78 Pt Platinum 195.085	79 Au Gold 196.967	80 Hg Mercury 200.592	81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [208.982]	85 At Astatine 209.987	86 Rn Radon 222.018
87 Fr Francium 223.020	88 Ra Radium 226.025	89-103	104 Rf Rutherfordium [261]	105 Db Dubnium [262]	106 Sg Seaborgium [266]	107 Bh Bohrium [264]	108 Hs Hassium [269]	109 Mt Meitnerium [278]	110 Ds Darmstadtium [281]	111 Rg Roentgenium [280]	112 Cn Copernicium [285]	113 Nh Nihonium [286]	114 Fl Flerovium [289]	115 Mc Moscovium [289]	116 Lv Livermorium [293]	117 Ts Tennessine [294]	118 Og Oganesson [294]

Lanthanide Series	57 La Lanthanum 138.905	58 Ce Cerium 140.116	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.243	61 Pm Promethium 144.913	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.500	67 Ho Holmium 164.930	68 Er Erbium 167.259	69 Tm Thulium 168.934	70 Yb Ytterbium 173.055	71 Lu Lutetium 174.967
Actinide Series	89 Ac Actinium 227.028	90 Th Thorium 232.038	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium 237.048	94 Pu Plutonium 244.064	95 Am Americium 243.061	96 Cm Curium 247.070	97 Bk Berkelium 247.070	98 Cf Californium 251.080	99 Es Einsteinium [254]	100 Fm Fermium 257.095	101 Md Mendelevium 258.1	102 No Nobelium 259.101	103 Lr Lawrencium [262]

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Notes of the treble clef:

A B C D E F G A B C D E F G A B

Key signatures indicate notes which are sharp or flat by default:

No sharps or flats All B's are flat B's and E's are flat B's, E's, and A's are flat B's, E's, A's, and D's are flat

All F's are sharp F's and C's are sharp F's, C's, and G's are sharp F's, C's, G's, and D's are sharp F's, C's, G's, D's, and A's are sharp

Accidentals overrule the key signature:

B^b A C B C[#] D C[#] C B^b A A^b G^b F G E^b E

F[#] G C B^b A G[#] A G