



# Bogus Academic Professors Having Lunch

(this is not a puzzle)

IT'S BEEN YEARS!

## Welcome Back, BAPHLers!

Welcome to Greendale Extension, study groups. We're so pleased to have you enrolled here at our program for creative problem solving. You'll be learning from six of our finest professors, the best in the field. Although your coursework may appear... "baphling" at first, your class is one of the cleverest we've admitted into a our program in years. And you'll be the first class to make use of our state-of-the-art new facilities on the MBTA Green Line Extension. Our ventilation systems fill our classrooms with so much fresh air, you'd think you were outside!

Your first set of courses will take place on August 27th, and your second set of courses will take place on September 10th. We think on-campus learning is best and encourage all study groups to attend in person, if able. If unable, you are permitted to take on a extra courses on one day or the other or even do your work remotely as independent study. But please note that some courses have fieldwork assignments that use information here on campus.

Every study group will get to take every course, no matter how they fare in other courses. Courses do not have limited seating, so you will *not* be receiving paintball guns today. We are sorry if this is disappointing.

We've spent a lot time putting together this curriculum, and we hope you'll like the assignments as much as we, your deans, do.



# BAPHL 22 Accident Waiver and Release of Liability

(sign and provide to game control before we begin)

I, the undersigned, wish to participate in the Boston Area Puzzle Hunt League's twenty-second event (BAPHL 22), scheduled for August 27, 2023, and September 10, 2023, in Medford and Somerville, Massachusetts.

I certify that I have adequately trained for this event and have not been advised against participating in the event by a qualified medical person.

I acknowledge that this event carries with it the potential for injury. The risks include, but are not limited to, those caused by terrain, facilities, temperature, weather, condition of players, equipment, vehicular traffic, and actions of others including — but not limited to — participants, bystanders, volunteers, or organizers of the event. I hereby assume all risks of participating in this event.

I understand that it is my responsibility to ensure that the environment in which I participate in the event is reasonably safe and secure for such participation. I agree and warrant that if, at any time during BAPHL 22, I feel anything to be unsafe, I will contact the organizers, and immediately leave the area and/or discontinue the unsafe activities.

I acknowledge that this Accident Waiver and Release of Liability form will be used by the event holders, sponsors, and organizers of the event, and that it will govern my actions and responsibilities at the event. I hereby take action for myself, my executors, my administrators, my heirs, my next of kin, my successors, and my assigns as follows to:

- Waive, Release, and Discharge from any and all liability for my death, disability, personal injury, property damage, property theft, or actions of any kind which may hereafter occur to me, including my travel to and from the event, the FOLLOWING ENTITIES OR PERSONS: the BAPHL 22 organizers, their directors, officers, volunteers, observers, representatives or agents, as well as those persons involved in the event.
- Indemnify and Hold Harmless the entities or persons mentioned above from any and all liabilities or claims made as a result of my participation in this event, whether caused by negligence of the releasees or otherwise.
- I hereby consent to receive medical treatment that may be deemed advisable in the case of an injury, accident or illness during the event.
- I understand that at this event or related activities, I may be photographed. I agree to allow my photo, video, or film likeness to be used for any legitimate purpose by the event holders, producers, sponsors, organizers, or assigns.

This Accident Waiver and Release of Liability shall be construed broadly to provide a release and waiver to the maximum extent possible under applicable law. If any portion of it is held to be invalid, I agree that the remaining terms shall continue to be in full legal force and effect.

This Accident Waiver and Release of Liability is for:

\_\_\_\_\_  
Team Name

\_\_\_\_\_  
Team Phone      Contact Preference:  Voice    Text

By signing below, I certify I am over 18 years of age, have read this document, and understand its content:

\_\_\_\_\_  
Printed Name                      Signature                      Date

\_\_\_\_\_  
Printed Name                      Signature                      Date

\_\_\_\_\_  
Printed Name                      Signature                      Date

\_\_\_\_\_  
Printed Name                      Signature                      Date

\_\_\_\_\_  
Printed Name                      Signature                      Date

\_\_\_\_\_  
Printed Name                      Signature                      Date

For any participants under 18, please complete the following:

\_\_\_\_\_  
Printed Name      Age      Signature of Guardian      Date

\_\_\_\_\_  
Printed Name      Age      Signature of Guardian      Date

\_\_\_\_\_  
Printed Name      Age      Signature of Guardian      Date

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Printed Name      Age      Signature of Guardian      Date

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Printed Name      Age      Signature of Guardian      Date

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Printed Name      Age      Signature of Guardian      Date



# Safety & Rules

MAKE US LOOK GOOD!

(this is not a puzzle)

BAPHL 22 is a puzzlehunt consisting of multiple rounds. Except for the final meta, each round is independent and does not need information from any other round. If you have been working on a round for two hours, please move on to the next location so that your team can acquire all the puzzles. Visit rounds in the order specified in your study group's course schedule; this has been arranged to minimize team congestion at each location and to enable staff to manage the rounds.

"Game Control" refers to staff and volunteers running this event. You can confirm solutions or intermediate messages with them. The puzzles are intended to be solved without extra reference materials. You are permitted to look things up online if you feel the need. You may also request hints from Game Control. There are multiple hints available for each puzzle.

If you believe a puzzle is instructing you to do anything unsafe, please consult with Game Control. If you are not having fun, or if you are unable to continue participating in BAPHL 22, please contact Game Control to let us know. We will do what we can to help.

Green Line station platforms are accessible without paying a fare. Some location puzzles may use information on those platforms.

Do not collaborate with other teams on puzzles, and try not to discuss puzzles your team has solved where other teams might overhear.

What if it rains?

You'll get wet.

**COMMUNITY:** Please be respectful. Be careful and be mindful of other people while solving; do not obstruct doorways or sidewalks, do not harrass passersby, and pay attention to traffic signals. Please respect folks with stricter COVID protocols.

We do not have an inclement weather plan. Patronize neighborhood establishments if you feel comfortable doing so. Large free indoor spaces include the Joyce Cummings Center at Tufts (Day 1), and the Somerville Library Central Branch (Day 2). We do not have permits for these spaces. Please respect their policies.

**CONTACT GAME CONTROL:** Until 6 pm on August 27 & September 10. Outside the hours of the event, responses may not be timely. Please identify yourself & team in your texts.

Julia Tenney: (617) 642-3869

Ata Gurpinar: (817) 881-8544 (yes, 817 is correct)

Matt Sakai: (617) 868-2214

**DIFFICULTY:** The lightbulbs indicate inspiration or "aha". The tools indicate perspiration or work required. Our rating system is inevitably subjective and fallible. But it may be a reasonable estimation in deciding how to delegate the puzzles within your team.

**MOVING TO THE NEXT ROUND:** After 2 hours at a round location, we encourage your team to move to the next location, and pick up new puzzles. Be sure to collect any site-specific information you need before leaving a location. Travel between some stops, particularly Magoun and Medford/Tufts, may take longer than you might expect.

**INDEPENDENT STUDY:** Game Control official hours are 11-6. If you complete Day 1 before 4:30 pm, you may request a Day 2 round. If you are unable to complete the hunt during the scheduled times, you may continue to work on your own, and remotely request hints as needed, until November 7.

**SOLUTIONS:** To be posted by November 7.



# Code Sheet

(this is not a puzzle)

HOW TO SOLVE

Many puzzles use common encoding methods to provide information. Since BAPHL is intended to be solvable without looking things up online, the following codes are provided to study groups on paper:

		Binary	Braille	Hex	Moon	Morse	NATO	Pigpen	Scrabble	Semaphore	Ternary
<b>A</b>	1	00001	⠠	01	∧	· -	Alfa	┘	A <sub>1</sub> (1)		001
<b>B</b>	2	00010	⠠	02	∩	- · · ·	Bravo	┘	B <sub>3</sub> (3)		002
<b>C</b>	3	00011	⠠	03	∪	- · - ·	Charlie	┘	C <sub>3</sub> (3)		010
<b>D</b>	4	00100	⠠	04	∪	- · ·	Delta	┘	D <sub>2</sub> (2)		011
<b>E</b>	5	00101	⠠	05	┘	·	Echo	┘	E <sub>1</sub> (1)		012
<b>F</b>	6	00110	⠠	06	∩	· · - ·	Foxtrot	┘	F <sub>4</sub> (4)		020
<b>G</b>	7	00111	⠠	07	∩	- - ·	Golf	┘	G <sub>2</sub> (2)		021
<b>H</b>	8	01000	⠠	08	○	· · · ·	Hotel	┘	H <sub>4</sub> (4)		022
<b>I</b>	9	01001	⠠	09		· ·	India	┘	I <sub>1</sub> (1)		100
<b>J</b>	10	01010	⠠	0A	J	· - - -	Juliett	┘	J <sub>8</sub> (8)		101
<b>K</b>	11	01011	⠠	0B	<	- · -	Kilo	┘	K <sub>5</sub> (5)		102
<b>L</b>	12	01100	⠠	0C	L	· - · ·	Lima	┘	L <sub>1</sub> (1)		110
<b>M</b>	13	01101	⠠	0D	┘	- -	Mike	┘	M <sub>3</sub> (3)		111
<b>N</b>	14	01110	⠠	0E	N	- ·	November	┘	N <sub>1</sub> (1)		112
<b>O</b>	15	01111	⠠	0F	○	- - -	Oscar	┘	O <sub>1</sub> (1)		120
<b>P</b>	16	10000	⠠	10	∠	· - - ·	Papa	┘	P <sub>3</sub> (3)		121
<b>Q</b>	17	10001	⠠	11	∩	- - - -	Quebec	┘	Q <sub>10</sub> (10)		122
<b>R</b>	18	10010	⠠	12	\	· - ·	Romeo	┘	R <sub>1</sub> (1)		200
<b>S</b>	19	10011	⠠	13	/	· · ·	Sierra	┘	S <sub>1</sub> (1)		201
<b>T</b>	20	10100	⠠	14	-	-	Tango	┘	T <sub>1</sub> (1)		202
<b>U</b>	21	10101	⠠	15	∪	· · -	Uniform	┘	U <sub>1</sub> (1)		210
<b>V</b>	22	10110	⠠	16	∨	· · · -	Victor	∧	V <sub>4</sub> (4)		211
<b>W</b>	23	10111	⠠	17	∩	· - -	Whiskey	∨	W <sub>4</sub> (4)		212
<b>X</b>	24	11000	⠠	18	>	- · · -	X-ray	┘	X <sub>8</sub> (8)		220
<b>Y</b>	25	11001	⠠	19	┘	- · - -	Yankee	┘	Y <sub>4</sub> (4)		221
<b>Z</b>	26	11010	⠠	1A	Z	- - · ·	Zulu	∧	Z <sub>10</sub> (10)		222



# Have You Tried...?

(this is not a puzzle)

HOW TO SOLVE

This is an abbreviated version of several similarly named files linked from the MIT Mystery Hunt Resources.

*For starters, have you tried...*

- ... reading the title and the blurb?
- ... pursuing even a train of thought that doesn't seem to give a cogent answer at first?
- ... looking at the code sheet?

*Letters and words, have you tried...*

- ... alphabetizing?
- ... using the leftover letters to spell something?
- ... rearranging the letters (aka "anagramming" or "transposing")?
- ... looking for unusual letter frequencies?
- ... determining if it is a Rot 13/Caesar shift in general?
- ... shifting from letters to numbers?
- ... diagonalizing (taking the first letter of the first answer, the second letter of the second. . .)?
- ... a pun?

*Numbers, have you tried...*

- ... using them to index into your entries?
- ... shifting from numbers to letters?
- ... seeing if there are any strange sequences?
- ... seeing if prime numbers are involved?
- ... seeing if fundamental constants are involved?
- ... asking what other numbers are close to the one you have?

*Perspective, have you tried...*

- ... saying it out loud to someone else?
- ... putting yourself in the constructor's shoes?
- ... making it 3D?
- ... cutting it up?
- ... folding it?
- ... connecting the dots?

*Zen, have you tried...*

- ... asking "what's weird about this?"
- ... checking your work?
- ... asking someone else to check your work?
- ... explaining your work to someone else?
- ... doing what you've already done again to the output?
- ... asking people if it looks like anything they recognize?
- ... thinking about what's missing?
- ... asking yourself whether you've used all the information?
- ... keeping even a strange-looking result?
- ... brute force?
- ... rereading the instructions?



## How Do I...?

(this is not a puzzle)

HOW TO SOLVE

Stuck on *how* to actually do something a puzzle requires? Maybe these ideas will help.

### How Do I Know How Long an Answer Is Supposed to Be?

If a clue is followed by a number in parentheses, that number tells you how many letters are in your answer. For example, "Piece of fabric used in bed (7)" might clue BLANKET, which is 7 letters long. When there are multiple numbers, they are telling you how many words are in the answer and how many letters are in each word. For example, "Another piece of fabric used in bed (6 5)" might clue FITTED SHEET, in which FITTED is 6 letters long and SHEET is 5 letters long.

### How Do I Anagram?

Try writing the letters of your word or phrase out of order. You could do this in a spiral formation or randomly. This may help you see another word or phrase that can be formed from the letters. For example, if you jumble up "ELEVEN PLUS TWO"...

L P N O  
U E V E L E W  
S T

...you may be able to see "TWELVE PLUS ONE" in it.

### How do I Convert from Numerical Bases? (binary, ternary, decimal, hexadecimal, etc.)

In traditional decimal (base-10) numbers, each "place" is a power of 10. For example, the number 129 represents

1 hundred + 2 tens + 9 ones  
or  $1 \times 100 + 2 \times 10 + 9 \times 1$

In binary (base-2), each "place" is a power of 2. For example, the binary number 101 represents

1 four + 0 twos + 1 one  
or  $1 \times 4 + 0 \times 2 + 1 \times 1$ ,  
which, in decimal, is  $4 + 0 + 1 = 5$ .

Similarly, in ternary/trinary (base-3), each "place" is a power of 3. For example, the ternary number 2121 represents 2 twenty-sevens + 1 nine + 2 threes + 1 one or  $2 \times 27 + 1 \times 9 + 2 \times 3 + 1$ , which in decimal, is  $54 + 9 + 6 + 3 = 72$ .

This idea can be extended to other bases, in which the "places" of the number are powers of the base.

### How Do I Solve a Cryptic Clue?

See the *Introduction to Cryptic Clues* on the following pages.



# Introduction to Cryptic Clues

(this is not a puzzle)

HOW TO SOLVE

Cryptic clues usually appear in puzzles called cryptic crosswords, a very popular format for people who like a little extra challenge in their word puzzles. Cryptic clues often appear in non-crossword form as well.

If you're new to cryptic clues (usually appearing in cryptic crosswords), don't fear. They follow a formula: each clue has two parts, possibly with a few words connecting the two parts, like a hinge.

One part is a normal meaning for the answer; it is the kind of clue you might see in a traditional crossword for the answer. The other part, however, is wordplay to lead you to the answer. So each cryptic clue offers you two ways to get to the correct answer! If you solve the clue in both ways, you can be certain you have the correct answer.

The reason that this does not make them twice as easy, however, is that the two parts can appear in either order, often without anything such as a punctuation mark clearly dividing the two parts. Each clue offers the challenge of figuring out the split and figuring out how the wordplay actually works.

There are some common types of clues, and we'll explain how they work:

## DOUBLE DEFINITION

This type of cryptic clue subverts the "one part is wordplay" assumption by still being composed of two parts but with both of those parts being different definitions for the same word. The two definitions may require the word to be pronounced differently, but they will be spelled the same.

**Example:** "Bewitch doorway (8)"

"Bewitch" clues ENTRANCE as a verb, to hold someone's attention, but "doorway" clues ENTRANCE as a noun, the thing one enters a building or room through.

## ANAGRAMS

These clues are the easiest to solve for many people but they are also the most flexible in terms of what indicators (the words that tell you what wordplay to perform) can appear. The letters of your answer appear in the wordplay half of the clue, all together, but they are scrambled out of order (for the answer). The anagrammed letters will be next to a word or phrase with a semantic meaning of confusion, disarray, or rectification.

**Example:** "World's broken heart (5)"

"Broken" indicates to anagram the letters of HEART to get EARTH. The apostrophe and letter S are connecting the two parts in the form of the contraction for "is," even though it may look like a possessive at first! The normal part of the clue is "World."

A trick to finding anagrams is when a word or set of consecutive words in the clue, next to an indicator as explained above, has the same number of total letters as your enumeration.

## HIDDEN ANSWERS

These clues put the answer directly in the clue, but usually broken up over several words (but they can appear within a single word sometimes!). The word(s) that contain your answer will be indicated by a word or phrases with a sense of secrecy or containment, such as "hidden," "housed by," "standing in," or "part of."

**Example:** "Superman, perhaps, found in the room (4)"

"Found in" indicates to look at the letters in THE ROOM. Indeed, the word HERO appears in it, broken up by a space. Sometimes articles can be part of an indicator or part of the text having wordplay performed upon it, so consider both options. The normal part of the clue is "Superman, perhaps."

## CHARADES

These clues break the answer up into pieces, much like a rebus puzzle, but with just text, rather than images. If the pieces are in order, there may be no indicators that the answer is broken up.

**Example:** "Distant object: obsolete coin (8)"

"Distant" clues FAR, and "object" clues THING, which combine into FARTHING. The normal part of the clue is "obsolete coin."

## CONTAINERS

These clues also break up the answer into pieces, but one piece has to go inside the other. These will be indicated by word or phrases meaning containment, holding, embedding, or surrounding. These indicators can look similar to the indicators for hidden answers at first glance!



# Introduction to Cryptic Clues

(this is not a puzzle)

HOW TO SOLVE

## CONTAINERS, continued

**Example:** "Satisfies primates holding round green vegetables (8)"

"Primates" clues APES, and "round green vegetables" clues PEAS. "Holding" indicates that APES will go around PEAS: AP(PEAS)ES, clued by "satisfies."

## REVERSALS

These clues provide a word or phrase that can be reversed to form your answer. They will be indicated by a word or phrase about changing direction.

**Example:** "Upside-down piece of baited device (4)"

"Piece" clues PART, which "upside down" indicates to reverse. This results in TRAP, clued by "baited device."

## DELETIONS

These clues will tell you to remove the front, the end, the middle, or the outside of a clued word or phrase. Sometimes they will give you the exact text to perform the wordplay on, like a hidden answer clue.

**Example:** "Household pests cut off top of trousers (4)"

"Trousers" clues PANTS. To "cut off top" of them, remove the first letter, P, to get ANTS, which is clued normally by "household pests."

## SHIFTS

These clues will tell you to move a letter or letters forward or backwards in the alphabet, with the most common type called "Caesar shifts." Look for an indicator word or phrase that conveys moving forwards or backwards.

**Example:** "Advance in a career (3)"

Advance indicates to move the letters IN A forward in the alphabet. Without any indication of how much to move them forward, a single shift of one is the most appropriate. J comes immediately after I in the alphabet; O comes after N; B comes after A. This results in JOB, clued by "career."

## ABBREVIATIONS

Within charades, sometimes a word or phrase may be cluing a letter (or a few letters) rather than an entire word that you need to use in your wordplay. Consider words that are part of common abbreviations or have shortened representations. NATO letters, Roman numerals, and chemical symbols are often used (but not exclusively!).

**Example:** "Foxtrot and Tango grab hold of one tantrum (3)"

"Foxtrot" and "Tango" are both NATO letters, representing F and T, respectively. "One" is a number, which is represented by I in Roman numerals. "Grab hold of" indicates a container: that FT contains the I that follows "grab hold of." This results in FIT, which is clued by "tantrum."

## SUBSTITUTIONS

Usually within charades, this wordplay tells you to replace a word or letters in a clued word or phrase with other words or letters. The text involved in the substitution may often be an abbreviation as well.

**Example:** "Blackbeard (and others) turning scores into dozens of sky captains (6)"

"Blackbeard (and others)" clues PIRATES, "scores" clues RATES, and "dozens" clues LOTS. Turning the RATES in RATES into LOTS results in PILOTS, clued by "sky captains". ("Of" is a connecting word.)

## COMPLEX CLUES

Cryptic clues on the harder side will often combine multiple of these wordplay techniques into a single clue. Although not an exact science, the length of a clue might *clue you in* on how much wordplay is happening.





# Grading Methodology

(this is not a puzzle)

HONORS

Undergrad and Grad teams are both welcome to be ranked by GPA or take their courses pass/fail.

## Pass/Fail & Incomplete

If you do not care about your GPA and just want to enjoy learning, feel free to ask for all the hints you need. Be sure to get all your location info during the event. Check in with us to confirm you have all the information. Complete the hunt during Independent Study. On the leaderboard, you'll be listed as PASS. Otherwise, we'll list you as incomplete.

## Percentage Scoring

For teams who wish to earn grades, your GPA will be calculated as follows.

The final metapuzzle will be worth 10% of your final GPA.

Each round will be worth 15% of your final GPA.

Within each round, that final exam will be worth half of the grade and each feeder puzzle will be weighted equally for the other half.

Your grade on each assignment will have a maximum score of 4.0 if it is solved instantaneously. The maximum possible grade will decay exponentially, with a score of 3.0 if it is solved in exactly 2 hours. Each hint will cost only ten minutes. (Hints must be taken in order.) For example, suppose you solve a round as follows:

Puzzle	Time Taken	Score
Feeder Puzzle Alfa	30 minutes + 1 hint = 40 minutes	3.6342
Feeder Puzzle Bravo	1.5 hour (including time spent on Alfa)	3.4641
Feeder Puzzle Charlie	unsolved	0.0
Metapuzzle	2 hours (including time spent on Feeders)	3.0

$$\frac{(3.63 + 3.46 + 0) / 3 + 3.0}{2} = 2.683$$

Make sure to check out of every puzzle, even if by text, to avoid accidental time penalties.

If every team needs the same hint, despite successful solves by our internal and external testers, we will consider eliminating that penalty from everyone's score.