Puzzle Hunt Guide

This is not a definitive or comprehensive guide on puzzle hunts, but is intended to help provide an introduction to puzzle hunts, and tips on hunt puzzle solving for all.
(portions originally adapted from the 2015 pre-MITMH presentation deck by Atlas Shrugged)
Check here too for a hunt Puzzle Writing Guide

Contents

1) What is a Puzzle Hunt?

What is a Puzzle Hunt?

- Fun puzzle game where teams participate to solve a series of "Hunt-style" puzzles, eg.

    ○ MIT Mystery Hunt

    ○ Galactic Puzzle Hunt

    ○ teammate Hunt

    ○ Google Games

    ○ Microsoft Puzzle Hunt

    ○ Singapore Puzzle Hunt

MIT Mystery Hunt (MITMH)

- www.mit.edu/~puzzle
- Probably the oldest and largest puzzle hunt in the world
    - Started in 1981 by MIT grad student Brad Schaefer
    - Held annually over the Martin Luther King Day weekend
    - Onsite at MIT (until 2020), online (2021 onwards)
    - In writing, often referenced by simply using "Hunt" with the first letter capitalized
- About 2000+ participants
    - ~300 teams (doubled after being fully online), size ranging from less than 10, to 100+
- Over 150 puzzles released to teams online
    - Many teams have members collaborating remotely from overseas

Singapore Puzzle Hunt (SGPH)

- www.sgpuzzlehunt.com

- Annual July puzzle hunt organized specially for those in Singapore

  - Organised by Puzzlesmiths since 2015

  - Modelled after the MIT Mystery Hunt

  - On-site (2015-2019), online (2020 onwards)

  - About 13-19 puzzles

  - Roughly 6-8 hours to complete

  - ~100 participants annually

Other Online Hunts

- Many online puzzle hunts of varying difficulty (and standards)
- Two high-quality ones: www.galacticpuzzlehunt.com & www.teammatehunt.com
- Annual online puzzle hunts organized by MITMH teams
  - Around 45 puzzles
  - Teams of 8, ~380-600 teams
  - Hunt lasts around a week, but the lead teams typically finish within the weekend
  - Puzzles tend to be harder/longer than MITMH (the regular teams tend to be experienced mainstays in various online hunts)
  - Relatively accessible to solvers given smaller number of puzzles and longer duration

Typical Hunt Structure

- Each Hunt typically has an overall theme or plot, which is revealed during/after kick-off.

  - Eg. 2016 MITMH – Inception; 2016 SGPH – Harry Potter

- You solve hunt puzzles that have a word or phrase as an answer.

- Puzzles are typically organised into thematic rounds. You use all the answers organised in each round to solve a metapuzzle or meta.

- There is sometimes a similar final meta-meta that uses all the round meta answers.

Hunt Structure (Unique to MITMH)

- Teams that solve all the round metas typically get to go on a final runaround endgame to find a hidden object.

- In the MIT Mystery Hunt, the final runaround consists of puzzles that lead teams to a coin hidden on campus.

- The first team to find the coin is declared the winner and writes the following year's Mystery Hunt.

2) What is a Hunt Puzzle?

What is a Hunt Puzzle?

- Puzzle type found in Puzzle Hunts with certain unique characteristics and follow certain conventions, eg.
    - Puzzles do not contain instructions
    - Require one or more intuitive leaps in thinking or "ahas" to solve
- Every puzzle has an answer that is (almost always) a word or short phrase.
- How to get an answer is usually not explained and part of the puzzle.

Parts of a Hunt Puzzle

- Title

- Flavourtext

- Main Body of Puzzle

Additional Differences with Other Puzzles

- All essential elements of a puzzle are provided together in the puzzle document (except for metas and exceptional cases).

- Even hints and confirmation points are designed into a puzzle.

- The solving steps can be logically inferred from the hints in the puzzle. A good hunt puzzle would not require solvers to "try everything".

- Puzzles usually have an additional layer of content theme/topic.

- This may often require use of external supplementary resources (eg. web search or subject matter expert), if the knowledge is not possessed at hand.

- Puzzles featured in other games mostly present an extractable form to solvers already, and only require the extraction of the answer/code (marked in beige area on the next slide)

- Extraction may give a clue phrase which requires further solving for the final answer, or an instruction to submit something to Hunt HQ

3) Steps to Solving a Hunt Puzzle

General Solving Steps for a Hunt Puzzle
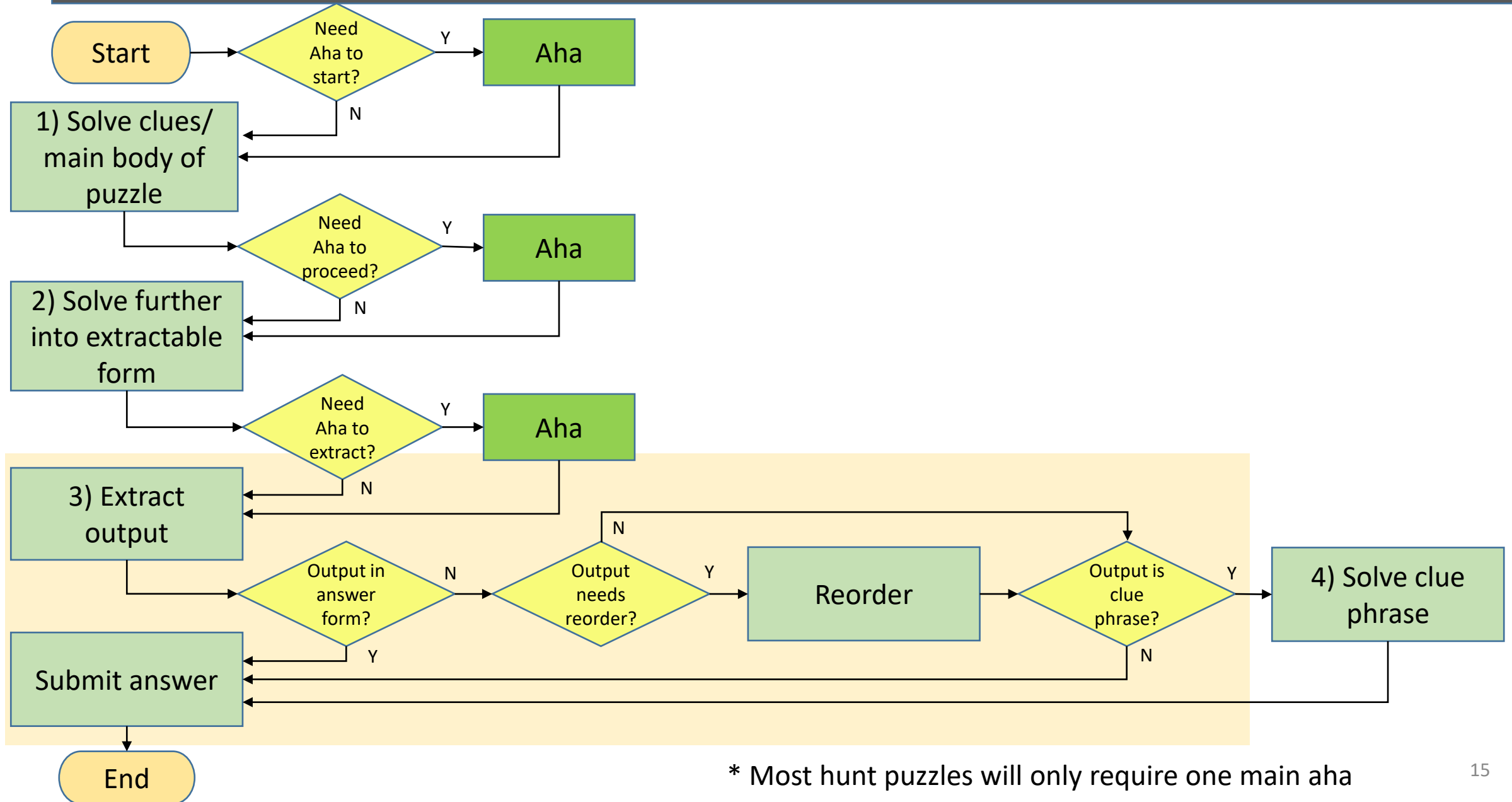
* Most hunt puzzles will only require one main aha

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Know Standard Conventions Used in Hunt Puzzles (to help with solving the puzzle logically)

- A clean hunt puzzle has no extraneous information, in particular if they could become red herrings (ie. <u>plausible</u> solving approaches which would <u>take solvers quite long to try and dismiss</u>).
  - Collorary - Key information provided should all be used in some part of the solving process.
- Clues or clue answers should be in alphabetical order if the given order is unimportant (eg. if the clue answers are meant to be reordered)
  - Collorary - Given order is important if clues or clue answers are not in alphabetical order
- Word forms, tenses and plurality of clues should be consistent with those of the required clue answers
- Puzzles should not be overly menial or tedious; or require too much detailed niche knowledge
- Numbers in parenthesis behind clues indicate the length of required clue answers, or sometimes the indexing used to extract a letter
- Blanks or boxes indicate the number of letters and spacing of required clue or puzzle answers.
  - Shaded/highlighted parts indicate extraction or changed letters
- Puzzle titles and any flavourtext usually include references to the answer, aha or theme; but should not be critical to solving the puzzle
- Cryptic clues follow standard conventions in their structure

General Solving Strategies (Steps 1 and 2)

- Look for clues in the title, flavourtext and main body of the puzzle. Notice any words that are unusual or look out of place – they are either hints to the theme or necessary parts of the puzzle

- Read the first letters of clues for a possible intermediate instruction

- Look for given key information in a puzzle that you have not used yet, or things that didn't need to be there

- Where there is a list of clues to be solved, there would be some clues which are more specific, to serve as easier entry points. Focus on those first.
  - You may need to identify the commonality or pattern first, in order to solve some of the other more ambiguous clues

- If you run into contradictions with traditional rules of the puzzle form, consider alternate rules possibly clued by the puzzle, such as filling in cells with multiple letters, leaving out certain letters etc

General Extraction Tips (Step 3)

- Final extraction is generally performed on derived information like clue answers or identified names, rather than given information

- Look for given key information in a puzzle that you have not used yet, or things that didn't need to be there

- Look for common methods used to encode letters (which should be hinted by the theme, flavortext or visual cues), eg.

  - Braille (possibly clued by words like blindness or feeling)

  - Morse Code (possibly clued by tapping, dots, or dashes)

  - #1-26, line tracing of letters, binary, ASCII, flag semaphore, resistor codes

  - Helpful resource as a reminder on the different methods (not intended to try all) -
    - www.mit.edu/~puzzle/resources/haveyoutried.pdf

General Clue Phrase Translation Hints (Step 4)

- Identify the form of the clue phrase, eg.

  - Cryptic clue – Solve the cryptic

  - Non-cryptic clue – Solve directly as crossword clue (eg. synonyms)

  - Follows the form of clues in main body of puzzle – Solve again recursively using the same approach as for clues in the main body of puzzle

  - Instruction – Follow the instruction. This may involve manipulating the physical form of the puzzle, or simply submitting a completed task to Hunt HQ

  - Helpful resources - Use an online thesaurus or crossword solver, eg.

    - www.thesaurus.com, www.onelook.com/thesaurus

    - www.wordplays.com/crossword-solver, www.the-crossword-solver.com

4) Types of Hunt Puzzles
(and approaches to solve them)

Types of Hunt Puzzles
(and approaches to solve them)

- Puzzles come in a few broad genres, and often combine multiple elements:
  - ○ Language/Word puzzles
  - ○ Logic puzzles
  - ○ Identification puzzles (ISIS)
  - ○ Physical puzzles
  - ○ Technical puzzles
  - ○ Mini-Runarounds
  - ○ Events
  - ○ Metapuzzle

Language/Word Puzzles

- Examples:
  - (Cryptic) Crossword
  - Letter or Word-play
  - Anagrams, common letters, associations
  - Bigrams, Trigrams
  - Cryptograms/Ciphers
  - Homonyms, Synonyms

- Look for commonalities in the clues or clue answers in the puzzle

- Make use of online anagrammers and other word builder tools

  - Helpful resources – www.nutrimatic.org, www.onelook.com, www.wordplays.com/crossword-solver, www.the-crossword-solver.com

Logic Puzzles

- Examples:
  - Nikoli Puzzles (eg. Sudoku, Kakuro, Masyu)
  - Paint by Numbers/Nonograms
  - Logic statement constraint problems
  - Recreate game history or states

- Use deduction and inference based on the puzzle rules to solve

Identification Puzzles (ISIS)

- Pictures, audio, video, text

- ISIS:
  - Identify
  - Sort
  - Index
  - Solve

- Start by identifying easier and more tightly constraint clues to figure out the aha first. Some clues may require the aha before the right identification is clear.

Physical Puzzles

- Examples:
  - Origami, Katakami
  - Jigsaw/edge-matching puzzle
  - Forming 3D models
  - Knitting, Crochet
  - Use given object/s

- Instructions are not given, so you have to figure out the rules to follow, eg. match numbered sides

Technical Puzzles

- Examples:
  - Coding/programming
  - Music/sound file analysis or manipulation
  - Image analysis or manipulation

- Puzzles which require more technical skills to solve may appear in hunts where team sizes are relatively large or hunt durations are long

- Make use of specialized programmes, eg.

  - Coding/programming – Matlab, C, Java

  - Music/sound – Audacity

  - Image – Exif viewer, Photoshop/Gimp

Mini-Runarounds

- You need to physically go around the hunt location to gather clues or answers.

- May or may not be obvious that it is a runaround.

Events

- A more unique interactive element of MITMH

- The event schedule is usually published at the start of Hunt

- Each team sends 1-3 representatives at the designated time to a location (or Discord server) to partipate in each event

- Usually an interactive game involving cooperation or competition between teams, with some minor solving elements

- Typically upon successful completion of the event, the team will receive either a hint token or the answer to the event (if it is also a round puzzle)

Metapuzzles

- A metapuzzle is a puzzle that uses the answers to other puzzles (in a round)

    - Depending on the hunt structure, there might be meta-metas that take in metapuzzle answers or puzzles that contribute to more than one meta

- Metapuzzle answers generally contribute to the overall plot/theme of the Hunt

    - Eg. MITMH 2013 (Bank Heist):

        - Each round's theme is a character

        - Metapuzzle answers tell you how to convince the character to help you with the heist

- You almost never need all puzzle answers to solve the metapuzzle.

    - Frequently, 2/3 to 3/4 of them are enough

Types of Metapuzzles

- Pure metas: All you need are the answer words from the round puzzles (and maybe some auxiliary information, like their ordering or titles)

  - Frequently uses thematic letter- or word-play, and/or the meaning of the answers

- Shell metas: There is additional metapuzzle information provided (eg. clues, or grid to fill), which you use along with the puzzle answers

5) How to Become a Better Hunt Puzzle Solver

Important Note on Hunt Puzzle Solving

- The most important point in taking part in a puzzle hunt and solving hunt puzzles is to have fun!

- Improving the ability to solve hunt puzzles will certainly help you to derive more enjoyment and satisfaction from the puzzles

- Nonetheless, it is just a means to an end, and the number of hunt puzzles solved should not define the fun of the hunt experience

- There are many other fun aspects in a puzzle hunt to be enjoyed, such as the camaraderie from solving with group of fellow puzzle enthusiasts (especially onsite), and the non-puzzle interactions with Hunt HQ and fellow solvers from other teams (like in MITMH).

Practise, Practise, Practise

- Honestly, this is the only way to become a better solver

- The more puzzles you solve, the more familiar you become with hunt puzzles and the more likely that you can anticipate what needs to be done when you see a similar hunt puzzle

- Archive of MITMH Puzzles by year: www.mit.edu/~puzzle/huntsbyyear.html

- Archive of SGPH Puzzles by year: www.sgpuzzlehunt.com/archive.html

- Form a team with other friends and enthusiasts to take part in 5-6 puzzle hunts throughout the year.

- Like our Singapore Puzzlehunt Facebook Page - www.facebook.com/sgpuzzlehunt

- Join the SG Puzzlers Facebook Group - goo.gl/JR4hqn

- Join the SG Puzzlers Discord server - https://discord.gg/dQ4mEdstNy

Google – Use often, use well

- Google anything and everything in the puzzle that you are unfamiliar with to find its reference, especially titles and key phrases/words in the flavortext

- Use quotes for phrases/words that belong together, to obtain more relevant search results

- Google a few clue answers together to find a potential common reference

- Add "crossword" keyword to search for common clue phrase answers

- Use image search function to identify pictures, add keywords if necessary to obtain more relevant search results

Use Good Online Tools

- Reverse image search – images.google.com
- Word builder – www.nutrimatic.org, www.onelook.com
- Thesaurus – www.thesaurus.com, www.onelook.com/thesaurus
- Crossword solver – www.wordplays.com/crossword-solver, www.the-crossword-solver.com
- Anagrammer – www.iread.it/anagrams.php
- Music/sound file analysis and manipulation – www.audacityteam.org
- Image file analysis and manipulation – www.exif-viewer.com

Read, and Read the Puzzle

- Even if the first step looks straightforward

- Read the title, flavourtext, scan through clues.

- You could save time on solving the clues if you see the common reference/aha early.

- Observe what key puzzle information given/remains that needs to be used

Familiarise with Hunt Puzzle Conventions

- Practise solving hunt puzzles so that the hunt puzzle conventions (slide 15) become second-nature. This helps with an intuitive and logical approach to figuring out the necessary next step to solving a hunt puzzle.

  - Caveat – Constructing a good clean hunt puzzle requires considerable time and effort from a responsible team of writer/s, editor/s, fact-checker/s and test-solvers. Some hunts achieve this much better than others. So it is not always that every puzzle in a hunt is good/clean and adheres to the hunt puzzle conventions.

Know When to Dismiss Your Own Theories

- Stop clinging on to your theory if there are already at least 2 clear contradictions and no possible way forward.

  - Collorary - Don't overthink. If there is or remains a way forward on a logical approach, try it out first. Your initial doubts could be resolved later on. Don't dismiss a theory too hastily just because the first few extractions don't really make sense. It might be due to a working/spreadsheet error, or a need to reo

- And just because you had a theory that did not work out does not make what you thought you saw a red herring in the puzzle. The fact that you could not make progress in your theory just means that you saw something that could not be reasonably interpretable as a clue in the puzzle. Remember, red herrings are <u>plausible</u> solving approaches which would <u>take solvers quite long to try and dismiss</u>

Solve with Different Teams Sometimes

- While helpful for a team to solve hunts often together to improve teamwork and know each other's strengths and weaknesses, you should also make an effort to solving with different teams sometimes to learn from the experiences and solving practices of others.

- This is especially valuable for solvers new to puzzle hunts, as they would benefit most from learning while solving together with other more experienced solvers.

6) Tips to Become a Better Hunt Puzzle Solving Team

Solve with/as a Team

- Learn from watching others

- More eyes are better than 2

- More heads are better than 1

- Leverage on individual strengths

- Individuals who are still less experienced at spotting ahas can also help contribute to working together on the grunt work of a puzzle that the team has already found the aha

Maximise Solving Efficiency

- Always triage puzzles and spot initial ahas together as a team first if possible

- Choose a puzzle where you think you know roughly what to do next first

- Switch to another puzzle if you run out of theories and are still stuck after 15min

- Give fresh eyes to another puzzle, and get fresh eyes on this puzzle.

Use a Shared Spreadsheet

- Set up a main Google spreadsheet to track overall hunt puzzle solve progress by the team, and individual spreadsheets for working on each puzzle

- Replicate the puzzle information like clues and grids on the spreadsheet so that the whole team can work on them together

- Tabulate information given and derived, so that they match up, and can be conveniently sorted in different orderings as required

- Provide header information and comments so that others can follow

- Eliminates messy handwriting and alignment, which account for many unnoticed errors and hence stuck puzzles

Pen Down Observations & Theories

- Write down all observations and theories on the puzzle spreadsheet for others to consider, and to serve as reminder on important things which are unused yet.

- Write down "failed" theories too. It lets others know what has been tried.

- Mark uncertain clue answers with a "?" at the end, so that others can help to verify and comment

End