Thank you for answering our call for research collaborators, MIT Class of 2028! We are an international research association dedicated to exploring the rare and bizarre in marine biology, and our latest project has left us feeling quite puzzled. We've been trying to identify a new species, and we believe that this aquarium holds all the answers we need to find it!

Each of our six marine researchers working at the New England Aquarium have identified a different potential clue hidden somewhere in the aquarium's archives, but they're having trouble getting to the bottom of each potential clue. Will you them crack this case?

Gratefully,
Professors Unified by Zealous Zoologically Linnaean Experiments

Welcome to Aquarium Hunt 2024! This is an annual puzzle event written and run by the MIT Puzzle Club for you, the incoming freshmen!

If you've never done a puzzlehunt before, don't worry! This is designed to be a hopefully accessible introduction to the world of puzzles, and there are puzzle club volunteers available to give hints after an initial "no-hints time" (which exists because this is a competitive race). Asking for hints is a normal and encouraged part of solving a puzzlehunt.

The process of solving is unique to each puzzle, and should be revealed by the puzzle itself; that said, we have also included a code sheet of common systems of encoding letters/numbers that frequently come up in puzzlehunting (note that not all of these methods will necessarily be used in this hunt). Using the internet beyond these resources should not be required for this hunt, but it is permitted!

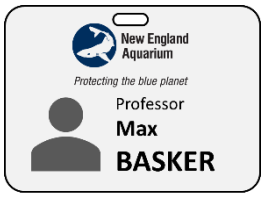
With each puzzle, your goal is to extract a word or phrase, which is the puzzle's answer. Once you have answered all 6 of the marine researchers' puzzles, we will give you the metapuzzle, which is a puzzle that requires the use of the answers to the previous puzzles in order to solve it. Solving the metapuzzle finishes the hunt!

Good luck!

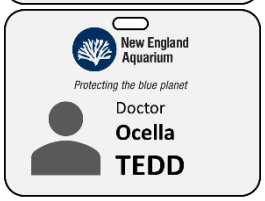
Answer Sheet for Team _____

team name goes here

Enter your puzzle answers here and show it to a puzzle club volunteer for confirmation.

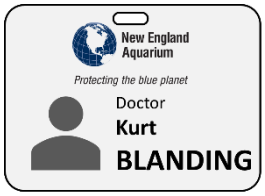


Puzzle Answer



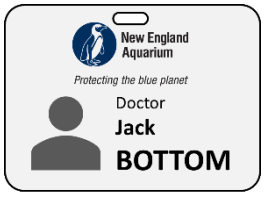
Puzzle Answer

Puzzle Answer

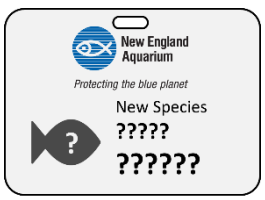


Puzzle Answer

Puzzle Answer



Puzzle Answer



Metapuzzle Answer

Code Sheet

[This contains all codes that may be used in this hunt. Not all of the codes will be used.]

Letter	Decimal (base 10)	Binary (base 2)	Morse	Braille	Semaphore
A	1	00001	•–		
B	2	00010	–•••		
C	3	00011	–•–•		
D	4	00100	–••		
E	5	00101	•		
F	6	00110	••–•		
G	7	00111	––•		
H	8	01000	••••		
I	9	01001	••		
J	10	01010	•–––		
K	11	01011	–•–		
L	12	01100	•–••		
M	13	01101	––		

Letter	Decimal (base 10)	Binary (base 2)	Morse	Braille	Semaphore
N	14	01110	–•		
O	15	01111	–––		
P	16	10000	•––•		
Q	17	10001	––•–		
R	18	10010	•–•		
S	19	10011	•••		
T	20	10100	–		
U	21	10101	••–		
V	22	10110	•••–		
W	23	10111	•––		
X	24	11000	–••–		
Y	25	11001	–•––		
Z	26	11010	––••		

PERIODIC TABLE OF ELEMENTS

1 H Hydrogen																	2 He Helium
3 Li Lithium	4 Be Beryllium											5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon
11 Na Sodium	12 Mg Magnesium											13 Al Aluminium	14 Si Silicon	15 P Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon
19 K Potassium	20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	31 Ga Gallium	32 Ge Germanium	33 As Arsenic	34 Se Selenium	35 Br Bromine	36 Kr Krypton
37 Rb Rubidium	38 Sr Strontium	39 Y Yttrium	40 Zr Zirconium	41 Nb Niobium	42 Mo Molybdenum	43 Tc Technetium	44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In Indium	50 Sn Tin	51 Sb Antimony	52 Te Tellurium	53 I Iodine	54 Xe Xenon
55 Cs Caesium	56 Ba Barium	57 La* Lanthanum	72 Hf Hafnium	73 Ta Tantalum	74 W Tungsten	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Tl Thallium	82 Pb Lead	83 Bi Bismuth	84 Po Polonium	85 At Astatine	86 Rn Radon
87 Fr Francium	88 Ra Radium	89 Ac** Actinium	104 Rf Rutherfordium	105 Db Dubnium	106 Sg Seaborgium	107 Bh Bohrium	108 Hs Hassium	109 Mt Meitnerium	110 Ds Darmstadtium	111 Rg Roentgenium	112 Cn Copernicium	113 Nh Nihonium	114 Fl Flerovium	115 Mc Moscovium	116 Lv Livermorium	117 Ts Tennessine	118 Og Oganesson

*	58 Ce Cerium	59 Pr Praseodymium	60 Nd Neodymium	61 Pm Promethium	62 Sm Samarium	63 Eu Europium	64 Gd Gadolinium	65 Tb Terbium	66 Dy Dysprosium	67 Ho Holmium	68 Er Erbium	69 Tm Thulium	70 Yb Ytterbium	71 Lu Lutetium
**	90 Th Thorium	91 Pa Protactinium	92 U Uranium	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	98 Cf Californium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium

Puzzle written by Atul ‘27

[The following text is meant to be one line. It is printed in four lines due to space constraints only.]

TOSIKILLSIORSITOSIDOSIASITASKSIETHPOSIT

EOPOFETHRDWOOSETHAPPPENDTHHEWOORDUPPTOO

THHEWOORDONNSHORTSVERSIONSOFSPASSIONSAN

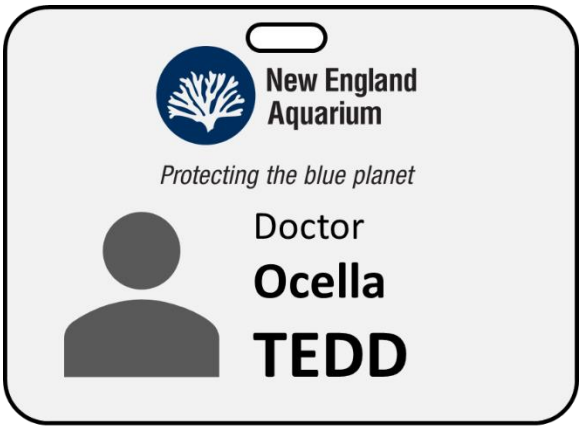
DSSOUNDSSLIKESANSANIMALS

					T	

	H			

			N

“	Z				”



Puzzle written by Atul ‘27

Dr. Ocella Tedd thinks ~~engaging~~interacting with this poem is the way to understand how to look at the new species.

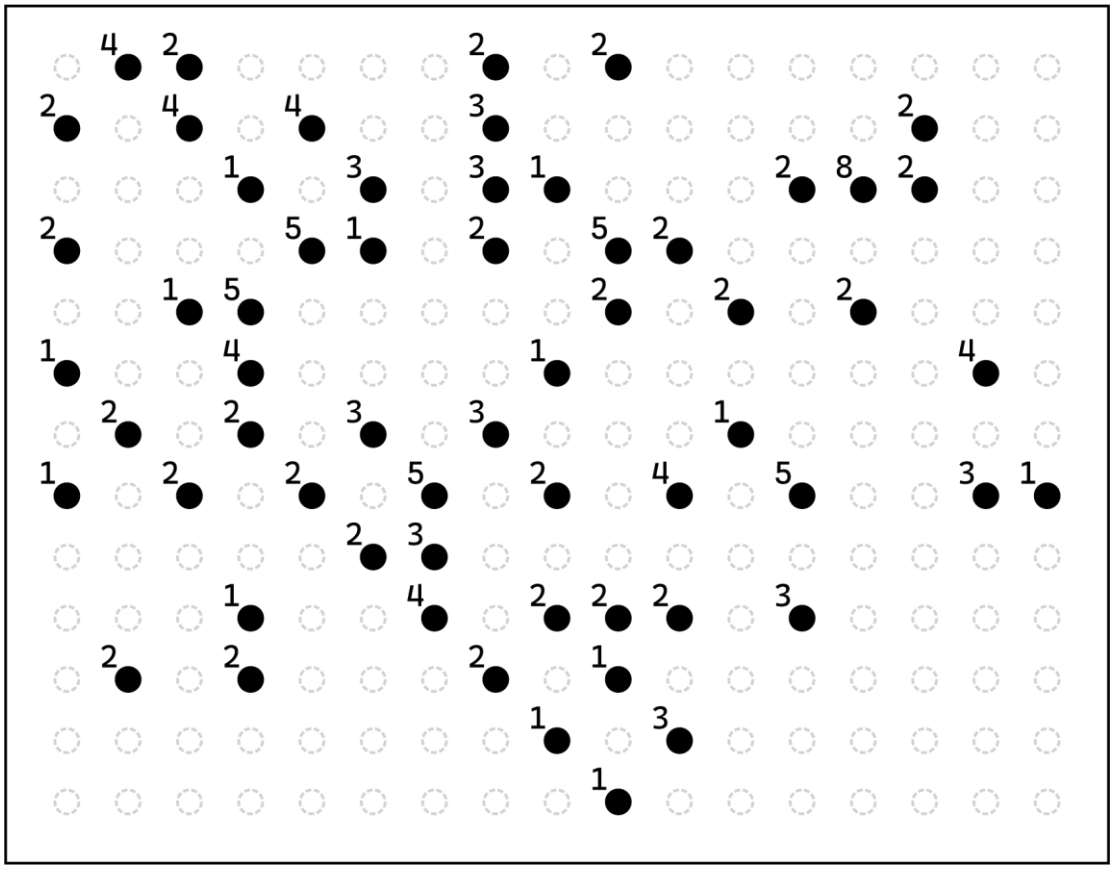
---

this is not a haiku,
[12]
glyphs here will not fade,
[4]
all who read this as impersonal,
[9]
it yields words with ACTs (a
[6]
cider-like poison) clued by those you see in the chasm
[9]
(elliptic maybe?) between the lines here.
[8]
move them into alternate forms for magic
[5]
learning upon reading the firsts.

Puzzle written by Ella ’27 and Jayna ‘27

You and Dr. Brooke Troutley have given up on puzzling over marine biology and have decided to stargaze together instead. Unfortunately, here in the middle of Cambridge, there’s a lot of light pollution, and some stars are too washed out to be visible. Luckily, the professor has a list of the constellations that are supposed to be there. Maybe if you can match constellations to the star map you’ve drawn you can find a way to get meaning from things that you can’t see.

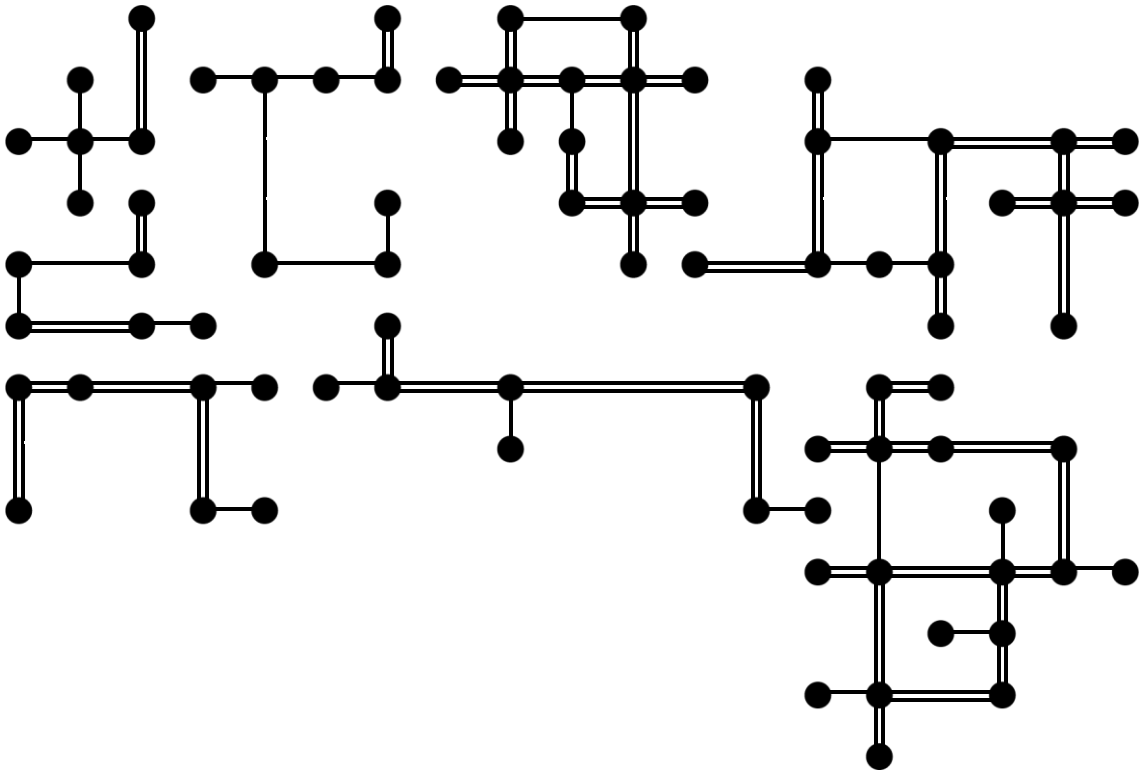
Star Map



Dr. Troutley's rules for constellation mapping

- Each star is labeled with a stellar classification number. Stars must have the same number of constellation lines connecting to it as its stellar classification number.
- Each star is used in exactly one constellation.
- Lines of different constellations may not cross each other.

Constellations



Answer:

1	2	3	4	5	6	7	8

Puzzle written by Sovannjet '27

Dr. Kurt Blanding is a storyteller, but they can't seem to get a reaction from their audience. Below is one of their stories. What element of storytelling are they missing?

1. as aquariuMgoers and Nascent students with new KeRbs and clasSrooms, you emBark gRandly From your hometowns in search of something.

2. you mine for hydroxyapaTite and arZrunite (the first is a moutHful, in multiple ways) in a wondeRful sanDbox; phoSgenite, foWlerite, and More are also being sCreened for.

3. before Continuing (you much preFer autuMn), you streTch and Relax in a cluBhouse, witHstanding warMth.

4. with biZnagas and Cutleaf coneflowers defiNing your next travel uPdate, you visit an excePtional lanDscape of plant oRganisms known for their exotiCness.

5. chaSing additionAl plants, you visit a Garden and fInd Snazzy litTle greeNhouse Flowers.

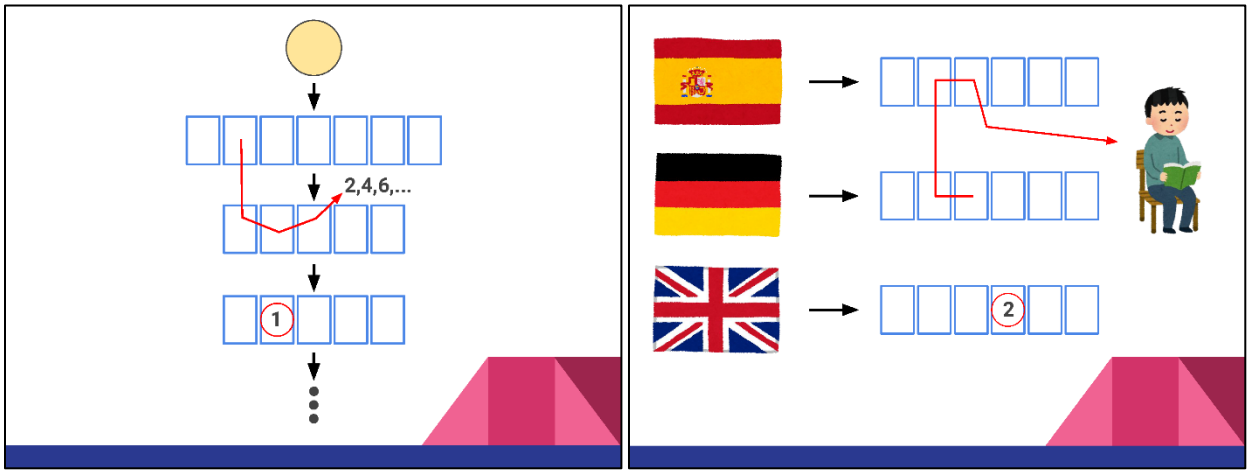
6. aS you PAss another location, with diSbelief, you find this puzzle quiTe Possible to soLve in an arMchair.

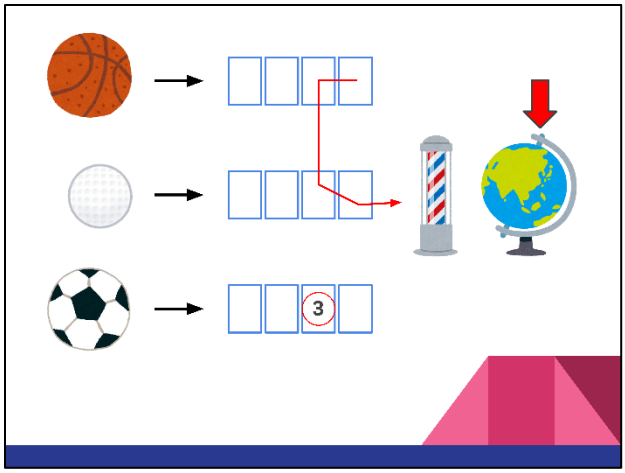
7. Arriving at the conClusion of your time aBroad, you realIze what this eXercise, this jouRney, this prOgression was all about—the ouTstanding goal all along.

Puzzle written by Aloysius ‘27

Prof. Indigo Dartings gave a presentation on her research.
I’ve found the twelve slides online, but it seems hard to piece them together without some prior knowledge of the subject matters.

[Although different slides may show similar objects,
they may not mean the same thing from one slide to another.]

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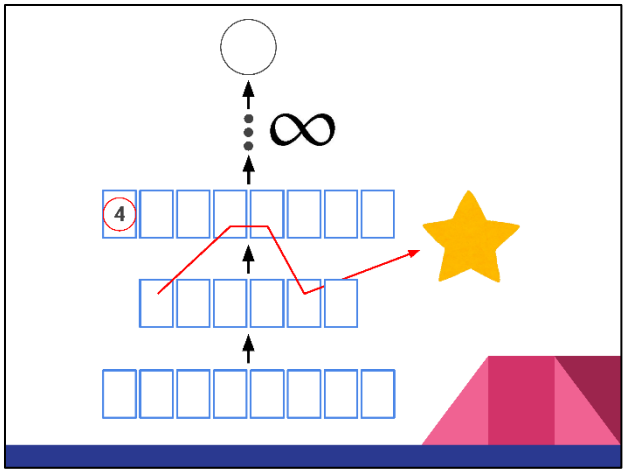
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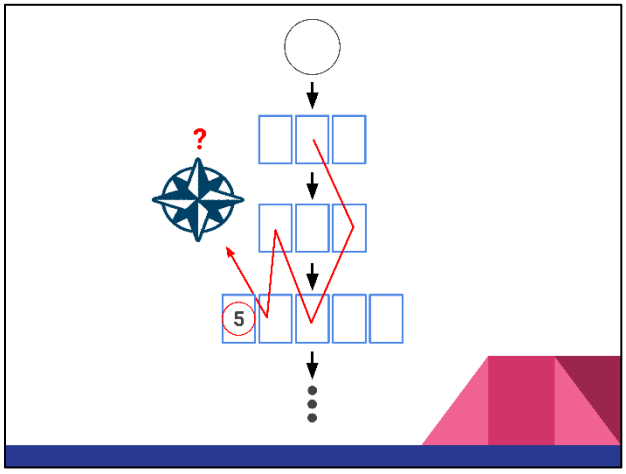
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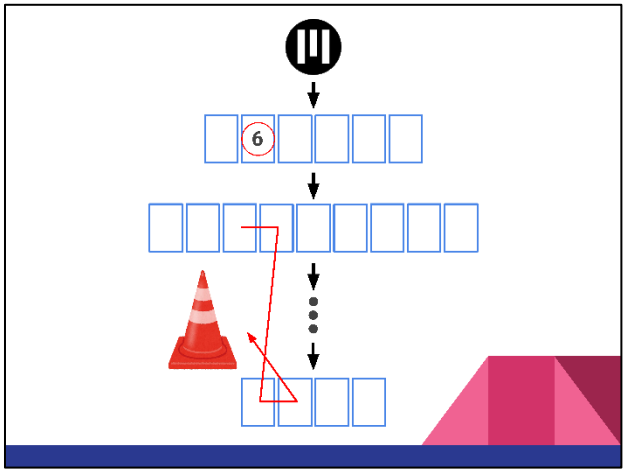
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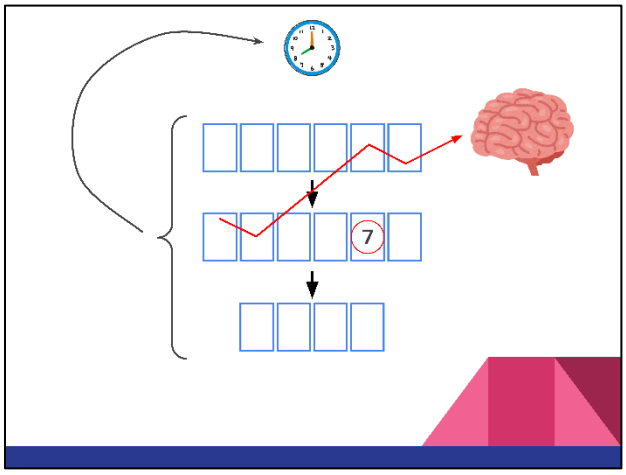
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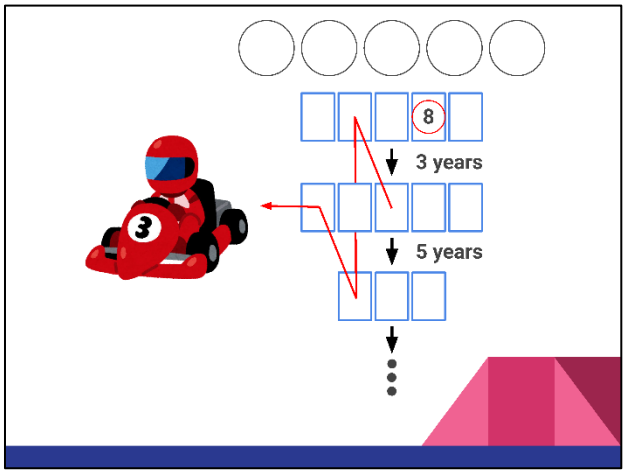
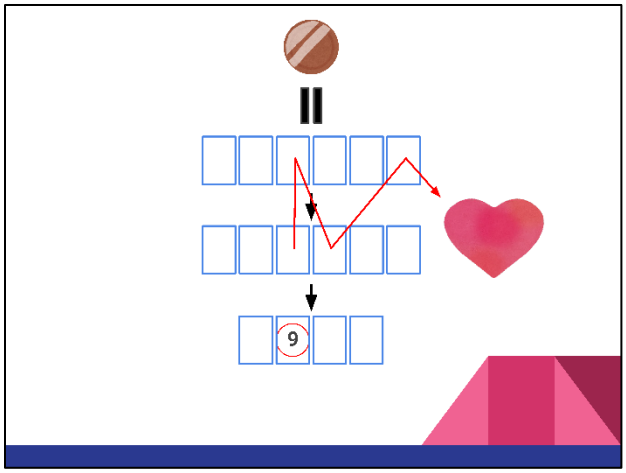

8
3 years
5 years
3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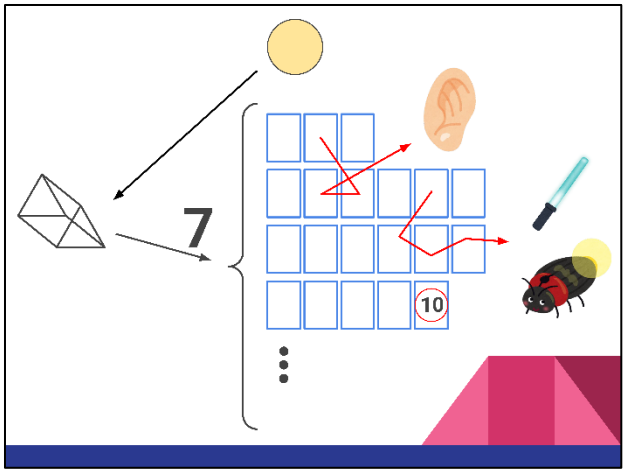
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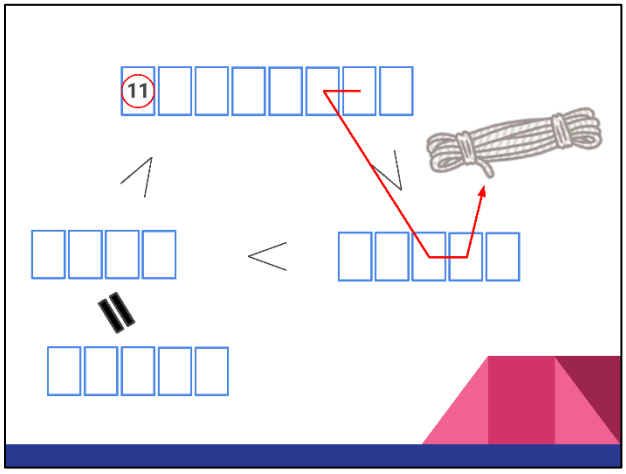
10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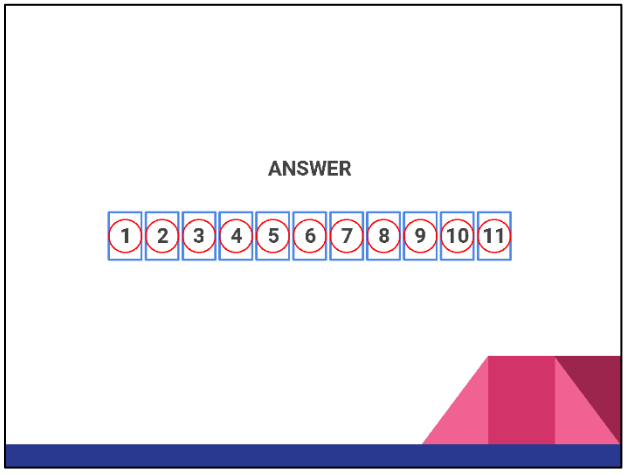

ANSWER
1 2 3 4 5 6 7 8 9 10 11

Puzzle written by John ‘18

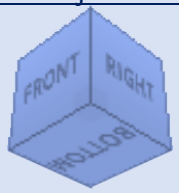
Upon returning home from the lab, ornithologist Jack Bottom discovers with dismay that his blueprints have been torn apart by his children! Ironically, the three-dimensional blueprints were part of a new snake-building toy he’s designing for his children….

He split up his secret research information in the two Snake Configurations of his toy, in different ways; can you find the hidden descriptor of his research subject?

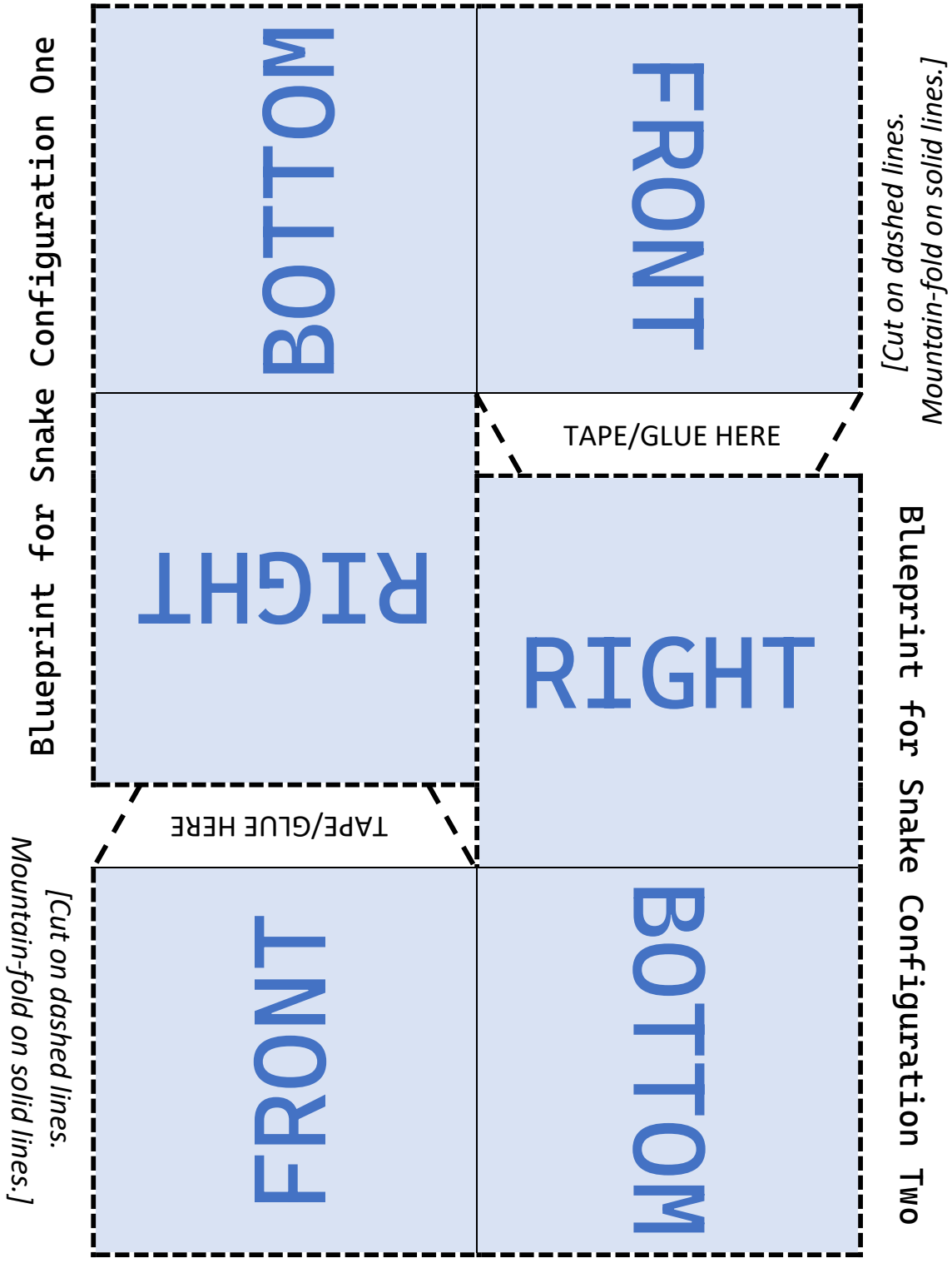
Building Guide for the Kids (Draft)

- This building toy consists of ten differently colored cubic blocks.
- The blocks can fasten to each other magnetically. This means that, as long as they’re connected face-to-face, you don’t have to worry about blocks falling down due to gravity!
- The blocks are designed to fit together in two Snake Configurations, as specified by the two different orthogonal projections in the blueprints.
- Each Snake Configuration uses exactly eight blocks.
- To build each Snake Configuration, figure out where the blocks must be arranged in 3D space, given that the blueprints show the blocks seen straight-on from each orthogonal direction.

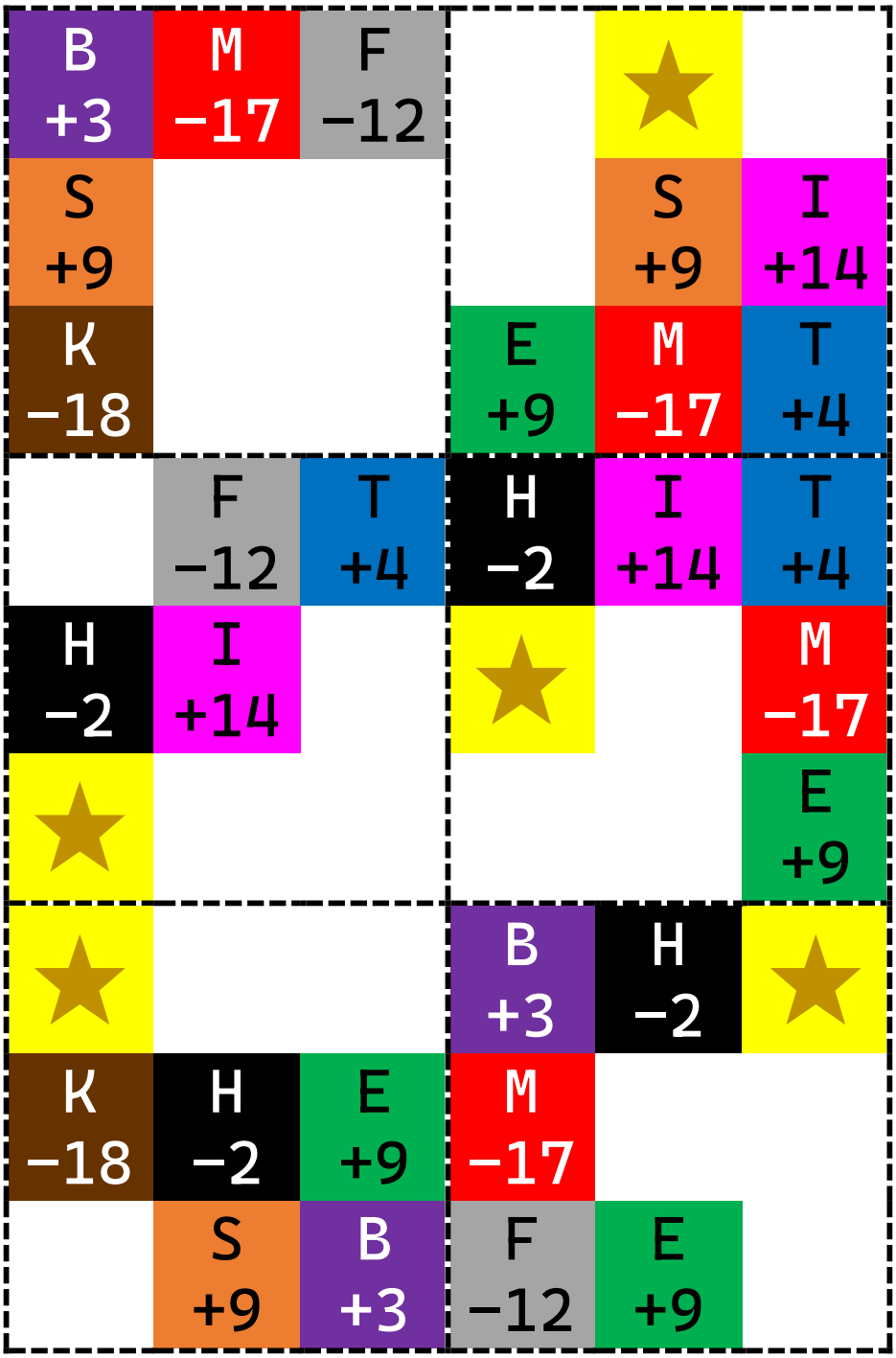
Orthogonal Projection Reference



These are the bases for the three-dimensional blueprints. Dr. Bottom's kiddos ripped the six colored plates off these two bases --- it's your job to put them back.



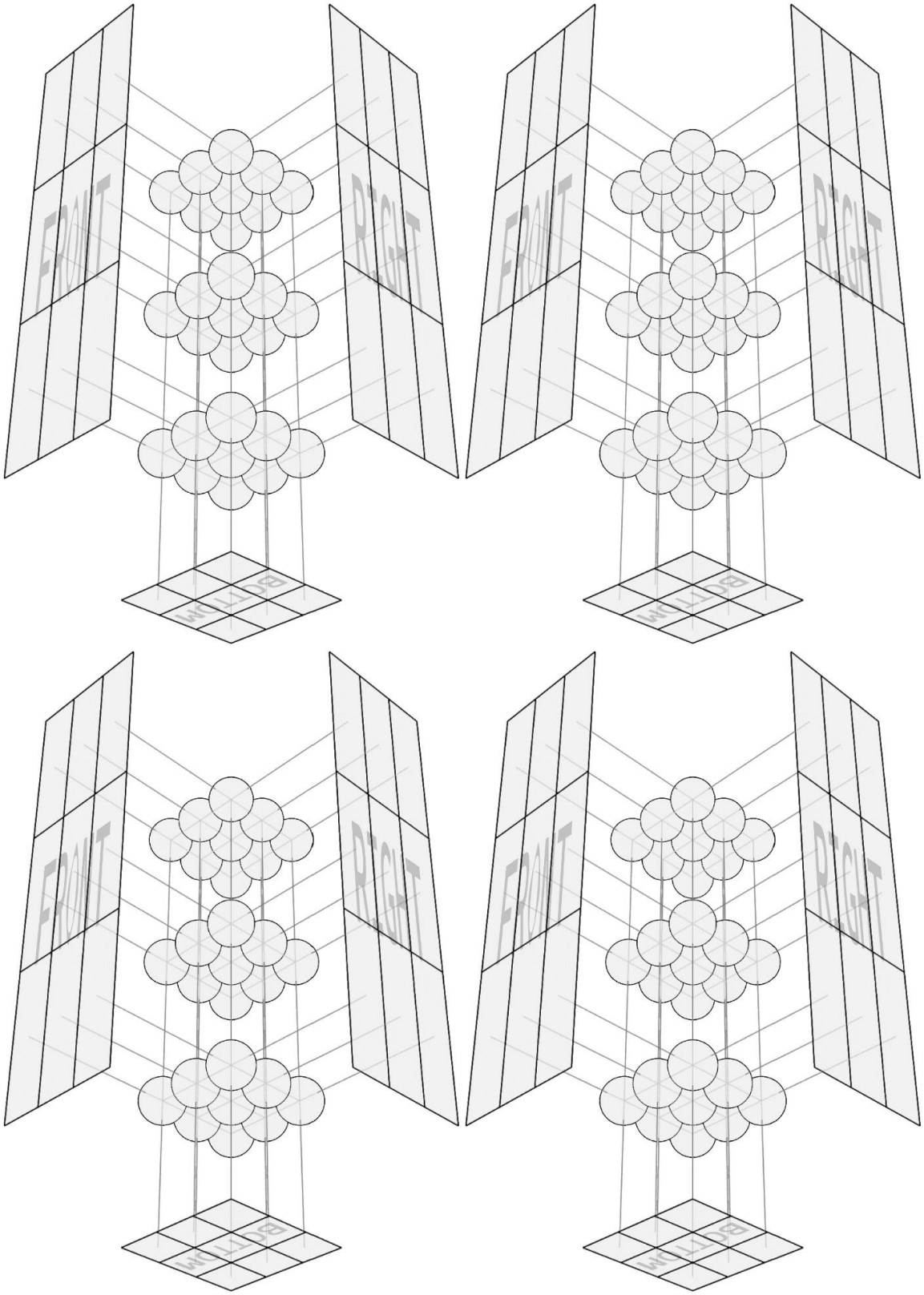
These are the six colored plates that the kiddos tore off the blueprint base. Three plates go on each blueprint; there is only one combination and orientation of the plates that can construct projections of the two valid 3D Snake Configurations.



[Cut out these six orthogonal projections on the dashed lines. They are in no particular order or orientation.]

4x Scratch Paper for 3D Configuration Prototyping

[This page does not contain any new information necessary for solving the puzzle.]

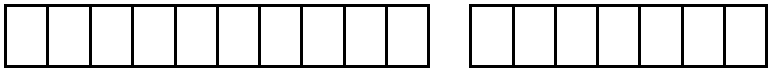


Puzzle written by Atul ’27, Ella ’27, John ’18, and Sovannjet ‘27

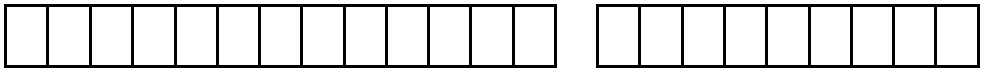
[Note to solvers: this puzzle is a meta puzzle! That means it requires your answers to the previous puzzles to be able to solve it. This puzzle also requires the use of the aquarium itself.]

The team of marine researchers have been working hard to identify each of the species that they’ve been studying, but they need your help to formalize their results. Can you help the professors determine once and for all what is the most unusual species in the aquarium?

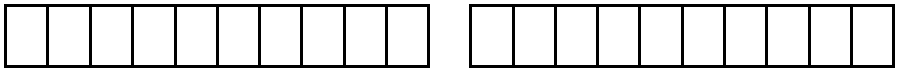
Prof. Max Basker



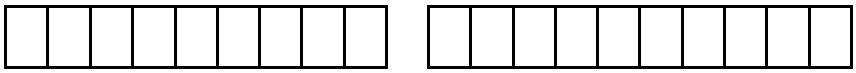
Dr. Ocella Tedd



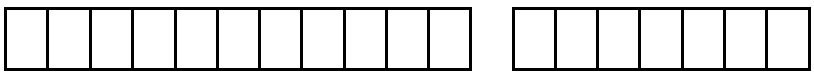
Dr. Brooke Troutley



Dr. Kurt Blanding



Prof. Indigo Dartings



Dr. Jack Bottom