Reboot the Noggin Episode 1
Riddle 1 - Can you solve the temple riddle?

Starting Group Partners _____

Your expedition of 9 finally stands at the heart of the ancient temple. But as you study the inscriptions in the darkness, two wisps of green smoke burst forth. The walls begin to shake. The giant sandglass begins flowing with less than an hour before it empties, and a rumbling tells you that you don't want to be around when that happens.

There are four potential exit tunnels but only one of them is actually the way out. Each tunnel is a 20 minute walk one way and another 20 minute walk back. You have an hour to get out. Ideally, you can send different groups into the tunnels and then meet back at the junction to know which way is the exit. But there's just one problem, 2 of the 8 graduate students in your group have been cursed by the artifact and may be lying (or may not be! you don't know if they are or who they are). You don't know which of the 8 students are cursed.

So what combination of people do you send down the tunnels to guarantee your group's exit?

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 2 - Can you solve “Einstein’s Riddle”?

Starting Group Partners _____

The situation

1. There are 5 houses in five different colors.
2. In each house lives a person with a different nationality.
3. These five owners drink a certain type of beverage, smoke a certain brand of cigar and keep a certain pet.
4. No owners have the same pet, smoke the same brand of cigar or drink the same beverage.

The question is: Who owns the fish?

Hints

1. The Brit lives in the house with red walls.
2. The Swede has a dog.
3. The Dane drinks tea.
4. The house with green walls is directly to the left of the house with white walls.
5. The owner of the house with green walls drinks coffee.
6. The person who smokes Pall Mall cigars owns a bird.
7. The owner of the house with yellow walls smokes Dunhill cigars.
8. The man living in the center house drinks milk.
9. The Norwegian lives in the first house.
10. The man who smokes Blends lives next to the cat owner.
11. The horse's owner lives next to the man who smokes Dunhill.
12. The man who smokes Blue Master drinks root beer.
13. The German smokes Prince.
14. The Norwegian lives next to the house with blue walls.
15. The man who smokes Blends has a next-door neighbor who drinks water.

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 3 - Can you solve the locker riddle?

Starting Group Partners _____

Your rich, eccentric uncle just passed away, and you and your 99 nasty relatives have been invited to the reading of his will. He wanted to leave all of his money to you, but he knew that if he did, your relatives would pester you forever. Can you solve the riddle he left for you and get the inheritance?

The Rules

Each relative is assigned a locker number. The relative assigned to locker number 1 opens all 100 lockers. The relative assigned to locker number 2 then closes all lockers whose numbers are multiples of 2. The relative assigned to locker number 3 changes the status of all lockers whose numbers are multiples of 3 (e.g. locker number 3, which is open gets closed, locker number 6, which is closed, gets opened). The relative assigned to locker number 4 changes the status of all lockers whose numbers are multiples of 4, and so on for each relative and locker up to 100. The lockers that remain open will contain the clue that leads to the combination for the safe.

Which lockers will remain open?

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 4 - Can you solve the frog riddle?

Starting Group Partners _____

You are poisoned and you know that a particular species of frog produces the antidote, which will cure you if you lick it. But to make things more complex, you know that only female frogs of the species have the antidote—males do not. In this frog species, males and females look identical but males have a distinctive croak. (Males and females also occur in identical proportion in this species.) In one direction, you see a single frog. In another, a group of two frogs sitting together. From the direction of the two frogs, you hear that distinctive "male frog" croak. Uh-oh! One of those two is definitely male.

As the poison sets in, you have to make a logical decision. You need to find a female frog with the antidote. Are your odds better going toward the group of two (one of which is definitely male), or toward the single unknown frog? And what are those odds, anyway?

Note that in this riddle you are not guaranteed to survive. You're just trying to take your best shot.

So which to choose, and why?

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 5 - Can you solve the prisoner hat riddle?

Starting Group Partners _____

You and nine other humans have been abducted by aliens. The aliens would like to eat you all, but not if you can prove your intelligence. So they propose a test.
The aliens line you up, placing you in order of height (tallest in the back, shortest in front), and place black or white hats on each of you. You must face forward, and you mustn't look at your own hat. Starting with the person in the back, each person must say a single word: "black" or "white" to guess the color of the hat on his or her own head, despite not being able to see it. If nine of you get it right, you live. If you don't, you're lunch. (You can get 1 wrong answer as a group.) The good news? You get to talk it through as a group first.
What strategy should the group use to save everyone?

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 6 - Can you solve the bridge riddle?

Starting Group Partners _____

Taking that internship in a remote mountain lab might not have been the best idea. Pulling that lever with the skull symbol just to see what it did probably wasn't so smart either. But now is not the time for regrets because you need to get away from these mutant zombies...fast. There are four people who need to get to the other side of the bridge, each with their own time needed to get across said bridge. Even worse, the bridge can only support two of them for each trip (and the person with the longer time is counted when traveling in the pair). Oh and it's like dark and there is only one lantern so a person who has crossed the bridge has to come back for a return trip in order to lead another person across once again. Person A can get across in 1 minute, Person B does it in 2 minutes, Person C crosses in 5 and slowpoke sloth human needs 10 minutes. You need to get everybody to the other side in under 17 minutes.
Can you figure out a way to have everyone escape in time?

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 7 - Can you solve the green-eyed riddle?

Starting Group Partners _____

Imagine an island where 100 people with Green Eyes are imprisoned by an evil dictator with no escape except for one strange rule . On the island, green-eyed people are allowed to leave, but only under dangerous circumstances—they have to go alone, at night, to a guard booth, where the guard will examine eye color and either let the person go (green eyes) or throw them in the volcano (non-green eyes). The tricks are: people don't know their own eye color; they can never discuss or learn their own eye color (only inference is allowable); they can only leave at night. You are allowed to come to the island and make one statement and you cannot tell them any new information.

What can you say to help free the prisoners without incurring the dictator's wrath?

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 8 - Can you solve the airplane riddle?

Starting Group Partners _____

Professor Fukanō plans to circumnavigate the world in his new airplane. But the plane's fuel tank doesn't hold enough for the trip—in fact, it holds only enough for *half* the trip. But with the help of two identical support planes (which can refuel him in mid-air) piloted by his assistants Fugori and Orokana, the professor thinks he can make it in one trip.

But since all three planes have the same problem of limited fuel, how can they work together to achieve the professor's goal without anyone running out of fuel?

Your Answer and Your Explanation

Reboot the Noggin Episode 1

Riddle 9: Can you solve the counterfeit coin riddle?

Starting Group Partners _____

You're the realm's greatest mathematician, but ever since you criticized the Emperor's tax laws, you've been locked in the dungeon. Luckily for you, one of the Emperor's governors has been convicted of paying his taxes with a counterfeit coin, which has made its way into the treasury. Can you earn your freedom by finding the fake? You must determine a single counterfeit coin in a dozen candidates. The problem is, you're only allowed the use of a marker (to make notes on the coins) and three uses of a balance scale. Here are the detailed conditions:

1) All 12 coins look identical.
2) Eleven of the coins weigh exactly the same. The twelfth is very slightly heavier or lighter.
3) The only available weighing method is the balance scale. It can only tell you if both sides are equal, or if one side is heavier than the other.
4) You may use the scale no more than three times.
5) You may write things on the coins with your marker, and this will not change their weight.
6) There's no bribing the guards or any other trick.

How do you identify the counterfeit?

Your Answer and Your Explanation

Reboot the Noggin Episode 1

Riddle 10: Can you solve the river crossing riddle?

Starting Group Partners _____

As a wildfire rages through the grasslands, three lions and three wildebeest flee for their lives. To escape the inferno, they must cross over to the left bank of a crocodile-infested river. Can you help them figure out how to get across on the one raft available without losing any lives?
The raft can carry two animals at a time and needs at least one lion or wildebeest on board. The problem is, if the lions ever outnumber the wildebeest on either side of the river, they'll eat them. (This includes the animals in the boat on a given side of the river.)
What's the fastest way for all six animals to get across the river without the lions eating any of the wildebeest?

Your Answer and Your Explanation

Reboot the Noggin Episode 1

Riddle 11: Can you solve the prisoner boxes riddle?

Starting Group Partners _____

Your favorite band is great at playing music...but not so great at being organized. They keep misplacing their instruments on tour, and it's driving their manager mad. Can you solve the brain-numbing riddle their manager assigns them and make sure the band stays on their label?

- Instruments have been randomly placed in 10 boxes.
- The pictures on the boxes don't necessarily correspond to the instruments inside.
- Each musician can open up to 5 boxes. They have to close all the boxes they open.
- All 10 musicians must find their own instruments.
- The musicians can't in any way communicate to each other what they find.

If the entire band fails to find their instruments, they're all fired...and the odds of them all finding their instruments via random guessing is 1 in 1,024. But the drummer has an idea that will radically increase their odds of success.

What's the drummer's big idea?

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 12: Can you solve the pirate riddle?

Starting Group Partners _____

Amaro is the captain of a pirate ship. His mateys, Bart, Charlotte, Daniel, and Eliza, are the other members of the crew. The group has come upon a bounty of 100 gold coins, and now must divide it up among the group according to "the pirate's code." The code stipulates that Amaro, as captain, gets to suggest the first plan for distributing the coins among the five pirates. After that proposal, each pirate (including Amaro) votes "yarr" or nay on whether to accept the proposal. If the proposal results in either a tied vote (equal numbers "yarr"/nay) or a majority of "yarrs," it passes and the coins are immediately distributed. If it fails to meet this threshold, Amaro must walk the plank, making Bart the next captain. (Amaro walking the plank removes him from future votes, as well as eligibility for coin disbursals, on account of his death. Yuck.)
This process now repeats with Bart as captain, and the captain's hat will be passed on, in order, to Charlotte, Daniel, and finally Eliza. (If it gets all the way to Eliza without a passing proposal, she gets the booty.) Here is a recap of the rules:

1. The captain makes a proposal for splitting up the 100 gold coins, which everyone votes on. A proposal that gets a tie or a majority of yarrs passes. A proposal with a majority of nays fails, and the captain has to walk the plank. The new captain then makes a proposal. The order of succession is Amaro, Bart, Charlotte, Daniel, and Eliza.
2. Each pirate's primary objective is to stay alive.
3. Each pirate's secondary objective is to maximize his or her gold.
4. Each pirate will vote to make the others walk the plank, all other results being equal. There are no abstentions.
5. Each pirate knows that the others share the same set of preferences.
6. Pirates cannot collaborate, make promises to each other, or form alliances; there is no communication outside the proposal and the votes, and no other trickery like murder or bribery. Even though they're pirates.
7. Each pirate is a perfect logician and all of them know this about each other.

What distribution should Amaro propose to make sure he lives (and gets as much gold as possible?)

Your Answer and Your Explanation

Reboot the Noggin Episode 1
Riddle 13: Can you solve the passcode riddle?

Starting Group Partners _____

In a dystopian world, your resistance group is humanity's last hope. Unfortunately, you've all been captured by the tyrannical rulers and brought to the ancient coliseum for their deadly entertainment.
You pass a series of numbered doorways, each with a keypad featuring the numbers one through nine. Each keypad opens with a code...but you have no idea what that code might be. You will be allowed to try to escape by facing a challenge. You are told that the passcode will contain three positive whole numbers, in ascending order (like 1, 2, 3—the second number is greater than or equal to the first, the third likewise to the second). You may ask up for up to three clues about the code—but you can't say anything else.
Zara, the team member participating in the challenge, has a one-way audio transmitter that allows the other two team members to listen. As Zara is led to the challenge through one of the hallways, she is informed that her challenge is to guess the passcode for her hallway based on rules.

- Zara asks for the first clue, and is told that the product of the three numbers in the code (x * y * z) is 36.
- Zara asks for the second clue, and is told that the sum of the numbers in the code (x + y + z) is the same as the number of the hallway she entered.
- Zara pauses for a few moments and then asks for the third clue, and is told that the largest (greatest) number appears only once in the combination.

Zara solves the puzzle and escapes.
Given that information, can you figure out the passcode?

Your Answer and Your Explanation

Reboot the Noggin Episode 1

Riddle 14: Can you solve the fish riddle?

Starting Group Partners _____

As the cargo director on the maiden voyage of the S.S. Buoyant, you've agreed to transport several tanks containing the last specimens of an endangered fish species to their new aquarium. Unfortunately, the boat is battered by a fierce storm, throwing your precious cargo overboard. There's a mini-sub onboard that might be of assistance, but there's a problem: You only have enough fuel for it to make one quick trip. Before launching your rescue mission, but only enough fuel for one trip to the ocean floor. You need to figure out exactly how many tanks fell into the water and where they landed.

After referring to sonar data, thermal imaging, and your shipping notes, you come up with this list of information to help narrow down your search.

1. There are three sectors where the cargo landed.
2. There are 50 animals in the area, including the lost fish and deadly sharks.
3. Each sector contains between one and seven sharks and no two sectors have the same amount of sharks. Every sector will have at least 1 shark and no more than 7.
4. The tanks each have the same amount of fish.
5. There are 13 tanks at most.
6. The first sector has two sharks and four tanks in it.
7. The second sector has four sharks and two tanks.

How many tanks do you need to find in the third sector?

Your Answer and Your Explanation

Reboot the Noggin Episode 1

Riddle 15: Can you solve the virus riddle?

Starting Group Partners _____

Your research group has isolated a lethal virus and is studying it in a lab. But one night after you leave the lab, an earthquake strikes and breaks the virus vials. This means that 15 of the 16 rooms in the lab are contaminated, and you have to get past the lab's security system in order to destroy the virus. (There is time pressure, as eventually the virus will escape the lab and kill us all!)

The lab is built as a 4x4 grid, containing a total of 16 rooms, with an entrance at the northwest corner and an exit at the southeast corner. Each room is connected to the adjacent rooms by an airlock. Only the entrance and exit rooms are connected to the outside. The virus has been released in every room except the entrance room.

To destroy the virus samples, you must enter each room and pull its self-destruct switch, destroying the room and the virus within it. But there's a problem—because the lab is in lockdown mode, once you enter a contaminated room, you can't exit without activating the self-destruct switch. Furthermore, once the self-destruct switch has been activated, you cannot re-enter a contaminated room.

Here are the official rules and restrictions:

1. You must enter the building through the entrance and leave through the exit.
2. Every room except the entrance is contaminated.
3. Once you enter a contaminated room, you must pull the switch.
4. After pulling the switch, you must immediately leave the room.
5. You cannot return to a room after its switch has been activated.

Your job is to enter through the entrance room, exit through the exit room, and destroy the virus in every contaminated room. How can you do it?

Your Answer and Your Explanation

Reboot the Noggin Episode 1

Riddle 16: Can you solve the three gods riddle?

Starting Group Partners _____

You have crash-landed on a mysterious planet. The only way to escape is to appease three alien overlords
You know that the three aliens are named Tee, Eff, and Arr. There are also three artifacts on the planet, each of which matches a single alien (for the sake of simplicity, let's assume they are labeled "Tee," "Eff," and "Arr"). To appease the aliens, you need to match up the artifacts with their aliens—but you don't know which of the aliens is which!
You are allowed to ask three yes-or-no questions, each addressed to any one alien at a time. (You can address multiple questions to the same alien, but you don't have to.)
To further complicate things, each alien has a specific behavior with regard to telling the truth. Tee's answers are always true. Eff's answers are always false. Arr's answers are random.
Yet another problem is that while you know the alien words "ozo" and "ulu" somehow correspond to "yes" and "no," but you don't know which is which. (I know, this situation just keeps getting worse!) So while you can communicate enough of the alien language to ask questions, they will respond only with "ozo" or "ulu." You may ask the questions one at a time, building on each response if you wish—meaning you have time to think about the next question based on what you have learned.
So your task is to ask three yes-or-no questions, while not knowing which answering words correspond to "yes" and "no," of three aliens whose identity is unknown, but whose behavior is predictable...if you knew their identity.
How can you figure out which alien is which, so you can hand the right objects to the aliens?

Your Answer and Your Explanation