The Update Number Guessing Game

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The update number guessing game needs two players. The new game still has a clearly goal, guess the right number. Based on this, we increased the chance to win. Besides, it also set some certain rules to prevent it into “boring”, in other words, it requires every player has a higher level of math. In all, this update number guessing game is a good educational game and it suitable for specific players, such as students.

Rules:

1. The game needs two players.
2. Player 1 choose a number between 1 to 50, player 2 guessing.
3. Player 1 choose a number between 1 to 50, player 1 guessing.
4. Each player could only ask 10 math questions max to narrow their choices, and after 1 question, another player gives 1 true answer. If 10 chances are used up, the guessing player must give a guess to determine whether it is right or wrong.
5. After one player had asked a question, the other player asked another question. So take turns.
6. The answers can only be “yes” or “no”.
7. The guessing player can only ask the same type of questions once, and they couldn’t ask the question that the other player had already asked. (Like if player 2 already asked player 1 “Is this number smaller than 10”, he could not asks any same type of questions anymore, like is this number smaller or bigger than a certain number

or a certain range. Also, another player couldn't ask same type of this question in his turn)

8. How to determine the winner: The end of the two players of guesses will determine the winning player of a round. First, if one player succeeds in guessing the right number but the other doesn't, the right player wins. Second, if both players succeeds in guessing the right number, so who used fewer questions wins. Third, if both players succeeds in guessing the right number and used same number of questions, it ties. If both players get the numbers wrong, it ties. And if the game ties, players could start a new round until it has a winner.

Design process:

The players in this game would all makes obvious decisions because the goal is clearly. So first, we realized the original game has a very large range of numbers which makes the game is too hard to win, so we first narrow its range to 1~50. Second, the original game doesn't has some rules to decrease its difficulty for guessing player, as a result, we make rule no.4, the guessing player could ask 10 questions, and they must has to be the math questions because we don't want any strange question to make this game becomes no more a math game. Rule no.5 is close to rule no.4, the answer must be a true answer and it only can be "yes" or "no". Cause we don't want to give the guessing player more details, otherwise it seems like the other player wants to help or disturb the guessing process of guessing player. Rule no.6 is a very important part, and it also prevent this game to "broken". The guessing player must to choose their question very carefully. Also, if one player can keep repeat same type of

questions, it will make the whole game lose entertainment. Like keep repeating “is this number lower than X (a certain number)”. The following rules determines the way to win, as we don’t want it ends as a tie, we need to make a rule which would make the game continues til it has a winner.

Lastly, we think this game really needs players has some knowledge of mathematics, if you know more about math, you can come up with more useful questions to narrow the guessing range. Like if player 2 already ask player 1 “is this number is a even number”, then he ask “is this number divisible by 2”, which makes the second question becomes a waste, because we know these two questions are actually the same question. For this reason, we would like to define this game as a good education game.

Strategic:

Players in this game would make obvious decisions, because the goal of this game is very clear and simple, players will only keep think about the new math questions to narrow the guessing range until they guessing the right number.

Besides, as the number is unknown, when players choose their questions, they must be very careful because they are also make blind decisions, like sometimes even a player used up 10 questions but he still has two or more numbers’ guessing range, so at this time, he must make a blind decision to guess a number.