|  |  |  |  |
| --- | --- | --- | --- |
| Titre de la vidéo | **Puzzle #3 The playful mathematicians** | |  |
| Rubrique | Logique | |  |
| Objectif(s) | Former la capacité d’extrapoler des informations à partir d’un problème, de travailler par exclusion. | |  |
| Durée | 25min | |  |
| Lieu du camp |  | |  |
| Animateurs |  | |  |
| N. des étudiants |  | |  |
| Date |  | |  |
| Les ressources  nécessaires | Pen, Paper | |  |
| Préparations | None | |  |
|  | | | |
| **Temps de la vidéo** | **Ce que fait le facilitateur** | **Ce que font les apprenants** | |
| 00:00 - 00:26 | Vidéo générale introduisant le CVM | |  |
| 00:27 - 00:46 | Video d'introduction | |  |
| 00:47 - 02:11 | Énigme | |  |
| After the end of the video | * Faciliter le processus, susciter des pensées * Lorsqu'une solution possible est suggérée, demander aux apprenants de répondre à la série de questions dans le cas de la solution suggérée et de vérifier que chaque réponse peut être expliquée. | * Se demander quelles informations ils peuvent obtenir de l’énoncé de l'énigme * Déterminer quels sont les cas pouvant être exclus * Proposer des solutions possibles | |

**Solution**

The possible options are (the order does not matter):

|  |  |  |  |
| --- | --- | --- | --- |
| **a** | **b** | **c** | **Sum** |
| 1 | 1 | 36 | **38** |
| 1 | 2 | 18 | **21** |
| 1 | 3 | 12 | **16** |
| 1 | 4 | 9 | **14** |
| 2 | 2 | 9 | **13** |
| 2 | 3 | 6 | **11** |
| 1 | 6 | 6 | **13** |
| 3 | 3 | 4 | **10** |

In order convince someone that these are all the options one can see that 36 is 3222. After that you may write each factor in a sheet of paper and with the papers one can try to form 3 groups. Empty group means one.

Also, try starting with **1 1 36**  and then decrease the last number gradually.

The table above represents what we know thanks to the answers given by the second mathematician (Fil).

But another important information is that the first mathematician (Mike) is not able to know the correct combination, even if he knows the actual value of the sum!

This can only happen if the number corresponding to the correct sum appears more than once in the list! (otherwise he would have guessed the correct numbers after the second question) So, the sum must be 13, and the corresponding combinations are:

|  |  |  |
| --- | --- | --- |
| 2 | 2 | 9 |

|  |  |  |
| --- | --- | --- |
| 1 | 6 | 6 |

The final clue is that the youngest child has blue eyes.

What we get from this clue is that now we know that a youngest child exists!

So **2 2 9** is not possible and **1 6 6** is the only remaining option.