A
Crazy
Calendar
Version 1

An incredible display of your mental abilities

A student is given 3 pages that each looks like a calendar. The student selects one of the calendars and then the student selects one of the 30 numbers on it. The student looks at the column their number is in and reads down the column IN ORDER stating the color of each square in that column. They are also told that when they read the color of the square their number IS IN they must **"LIE"** and state the incorrect color.

You do not know the card they selected.

You do not ever see the card or the numbers on the card.

They lie about the color of their number

But you detect the truths and lies and tell them their number.

Crazy Calendar 1

71	35	62	53	46
41	5	52	63	76
21	65	32	3	16
60	24	73	42	57
63	27	70	41	54
65	21	76	47	52

Crazy Calendar 2

73	51	5	54	32
43	61	35	74	2
23	1	55	14	62
62	40	14	55	23
61	43	17	56	20
67	45	11	50	26

Crazy Calendar 3

21	6	24	31	42
11	36	14	1	72
71	56	74	61	12
30	17	35	20	53
33	14	36	23	50
35	12	30	25	56

Procedure:

A student is given the 3 calendars. The student selects one of the calendars but does not show it to you. They should lie the other 2 calendars face down on the desk so you cannot see the numbers.

The student is told to pick a number on the Crazy Calendar. It is either in a "white" or "gray" square. You **SHOUID NOT** look at the card during the entire trick.

Ask them to look at the **COLUMN** their number is in. They will now read **down that column from top to bottom and** state the color of each square in that column.   They will say white or gray for each square.

Also tell them that when they read the color of **the square their number IS IN** they must **"LIE"** about its color and state the incorrect color. If the square is White they must say Gray and if the square is Gray they must say White (but only for the square with their number in it).   You can explain this need to lie as follows. "I can look in your eyes and detect the lie and that's how I will know your number".

I suggest you walk through this with your student once while you watch to be sure they can follow the instructions.

Examples:

They select 65	They say
6	White
5	Black
65	Black (LIE)
24	Black
27	White
21	Black

They select 41	They say
53	White
63	White
3	Black
42	Black
41	White (LIE)
47	White

You can tell their number as soon as they finish stating the colors of the 6 squares (with the lie). well how fast you do it will depend on you basic base 2 skills. The explanation on how to do this is on the next page

Note:
There are 3 calendars. You could use three students and have each of then select a different calendar. You could then do the trick for each student one at a time.

How to find their number.

The student will look at the column their number is in. They will call out the **colors of the top 3 squares** of the column in order (including the lie if there is one), either white or gray. If we let white =0 and gray = 1 then they will actually call out 3 binary numbers.   The first one is put in the 1's place, the second one is placed in the 2's place and the third one is placed in the 4;s place. Convert this binary number to base 10 and this will provide the 10's digit of their number

They will call out the **colors of the bottom 3 squares** of the column in order (They will call out the colors of the top 3 squares of the column in order (The first one is put in the 1's place, the second one is placed in the 2's place and the third one is placed in the 4;s place. Convert this binary number to base 10 and this will provide the 1's digit of their number

This will give you the number they chose.

Example   They select 65 from a column on the card.

	White = 0 Gray = 1	The first 3 binary values in the column determine the 10's digit of their number The last 3 binary values in the column determine the 1's digit of their number
They select 65	They say	The **first 3** binary values in the column determine the 10's digit
6	White = 0	0 in 1's place _ _ 0
5	Gray =1	1 in 2's place _ 1 0
65 (lie)	Gray =1	1 in 4's place 1 1 0 the digit in **the 10's place is 6**
		The **last 3** binary values in the column determine the 1's digit
24	Gray = 1	1 in 1's place _ _ 1
27	White = 0	0 in 2's place _ 0 1
21	Gray = 1	1 in 4's place 1 0 1 the digit in **the 1's place is 5**
		Their number **is 65**

Example   They select 65 from a column on the card.

	White = 0 Gray = 1		The first 3 binary values in the column determine the 10's digit of their number The last 3 binary values in the column determine the 1's digit of their number
They select 41	They say		The **first 3** binary values in the column determine the 10's digit
53	White = 0		0 in 1's place _ _ <u>0</u>
63	White = 0		0 in 2's place _ <u>0</u> <u>0</u>
3	Gray =1		1 in 4's place <u>1</u> <u>0</u> <u>0</u> the digit in **the 10's place is 4**
			The **last 3** binary values in the column determine the 1's digit
42	Gray = 1		1 in 1's place _ _ <u>1</u>
41 (lie)	White = 0		0 in 2's place _ <u>0</u> <u>1</u>
47	White = 0		1 in 4's place <u>0</u> <u>0</u> <u>1</u> the digit in **the 1's place is 1**
			Their number **is 41**

Binary number   <u>0</u>   <u>0</u>   <u>1</u>   0 0 1 base 2   converts to   0 + 0 + 1 = 1 base 10
Base 10 value   4   2   1

Binary number   <u>0</u>   <u>1</u>   <u>0</u>   0 1 0 base 2   converts to   0 + 2 + 0 = 2 base 10
Base 10 value   4   2   1

Binary number   <u>0</u>   <u>1</u>   <u>1</u>   0 1 1 base 2   converts to   0 + 2 + 1 = 3 base 10
Base 10 value   4   2   1

Binary number   <u>1</u>   <u>0</u>   <u>0</u>   1 0 0 base 2   converts to   4 + 0 + 0 = 4 base 10
Base 10 value   4   2   1

Binary number   <u>1</u>   <u>0</u>   <u>1</u>   1 0 1 base 2   converts to   4 + 0 + 1 = 5 base 10
Base 10 value   4   2   1

Binary number   <u>1</u>   <u>1</u>   <u>0</u>   1 1 0 base 2   converts to   4 + 2 + 0 = 6 base 10
Base 10 value   4   2   1

Binary number   <u>1</u>   <u>1</u>   <u>1</u>   1 1 1 base 2   converts to   4 + 2 + 1 = 7 base 10
Base 10 value   4   2   1