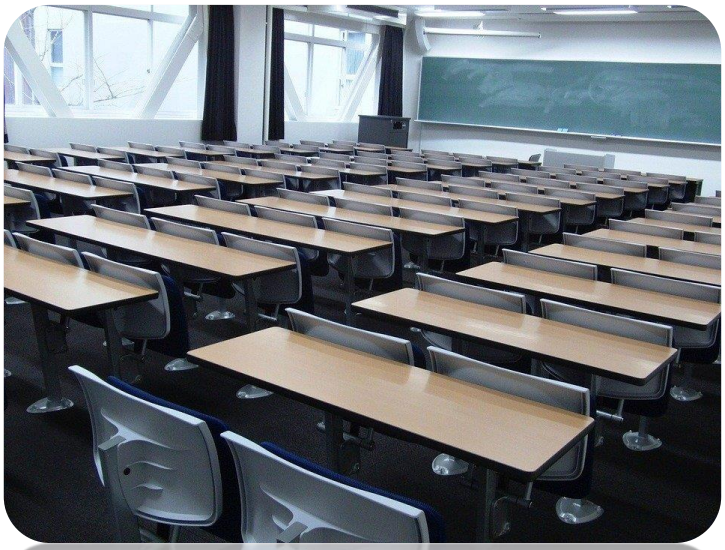

Intellectual Cycles and Seating Plan Matching Software for Classroom Engagement

User Guide

Seat Matrix

Document Identifier: ICSP-FSP-001 V3.00

Table of Contents

Version Control

Version	Document	Change Description
V1.00	ICSP-FSP-001	Initial Help Plan and Calculation Formulas
V1.02	ICSP-FSP-001	Creation of Spreadsheet Software and Help section
V1.03	ICSP-FSP-001	Formulation of Overview and Operational Advice
V1.04	ICSP-FSP-001	Icon/Initial Name, Additional Advice and Feedback added to Operational Advice. Release of updated spreadsheet with traffic colour coding, black highlights and basic instructions added to User Guide. Rebuild of Help for first phase release. Addition of first round of referencing and research. Integration of Biorhythmic formulas and supporting data
V1.05	ICSP-FSP-001	Planned maintenance release in future…. given initial user feedback on Draft Release – Beta V1.04. This will guide direction for Version 2.00. Addition of user reviews will be envisaged. E-mail address live
V2.00	ICSP-FSP-001	First release. Donation support enabled with User Reviews included
V3.00	ICSP-FSP-001	Website Download Release. Added Additional Functionality Rearranged Calculation Columns. Added Student Male/Female Updated video instruction and User Guide improvements

Glossary of Terms

Term	Definition
ADHD	Attention Deficit Hyperactivity Disorder
ASD	Autistic Spectrum Disorder
BCE	Brisbane Catholic Education
ICT	Information and Communication Technology
RE	Religion
SLI	Speech Language Impairment
SOR	Study of Religion

Contact Information

If you wish to provide feedback or donate an **amount** to support this project, please contact e-mail:

editor@symballousa.com

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Many kind thanks for any support to be received

Overview

Introduction

This document is a User Guide for classroom Seating Plan Matrix Software. You will be shown how to use intellectual cycle biorhythmic techniques for seating plan layouts, which have been found to be very useful for when students are unknown or have major behavioural issues. It also provides a very strong foundation for classroom seating plans. Feedback on its usage is most welcome. The author is a High School Teacher with seven years of experience in Private Catholic, BCE and State Schools, teaching in a variety of heavily contrasting demographic areas, and has worked on long term contracts in Co-Educational, All-Boys and All-Girls environments. Subjects taught include Religious Education, SOR, RE and Ethics, ICT, Digital Technologies/Solutions, Business, History, Geography, English, Science, Maths and Design and Technology.

The Problem

Four years ago, I found myself teaching a Year Nine Maths Class with significant behavioural management issues and several students with learning support needs. Many had ADHD/ASD and many others were unverified students. No matter where I placed these students in the class, a negative behavioural "hotspot" outcome always appeared to result. The old suggestions such as simple alphabetical ordering etc... did not work.
With no obvious alternatives, I decided to try and find any codified class seating arrangement strategy that might work based on personality.

Evaluation

Pondering the issue, I decided to experiment with any sort of "scientific" and/or "pseudo-scientific" method to see if I could somehow match personalities based on intellectual compatibility. I quickly discounted astrology, and other options, but stumbled across the older idea of Natural Biorhythms. This was a "pseudo-scientific" method that became popular in the 1970s for matching personality types. What appeared promising to utilise was the specific "Intellectual" or 33-day cycle of Biorhythms, even though it is still a subject of many decades' worth of study and debate.

The intellectual cycle was expounded upon by Dr Alfred Teltscher a Vienna mathematician and engineering professor at the University of Innsbruck in the 1920s who discovered in testing that his students had a 33-day pattern of well-performing and ill-performing mental agility, (Chemeurope.com, 2020). This was a curious observation. It was the empirical observations of an educator which garnered my interest, for despite the many conflicting reports, studies and variables involved with Biorhythms, human observations of educators in a classroom environment merit attention. There are psychologists such as Dr Rexford Hersey who provided some positive studies about the Emotional Rhythm, (Hersey, 1932). There are many contrary studies which have shown no improvement in Academic Reading achievement using Biorhythms, (Peveto, 2020), but these appear restricted to studying individual achievement within the cycle frameworks, and not matching student personalities, which actually is the point of the exercise in this particular case. Positive academic studies on Biorhythms abound in some Aviation, Law and Sporting realms.

The intellectual cycle according to Teltscher governs intelligence, memory, intellectual ambitions, mental alertness, intuition and logical thinking. There are Japanese researchers today who think the intellectual cycle is related to thyroid or other gland emission cycles connected to brain function. Biorhythms might be regarded as pseudoscience, yet Chronobiology is now highly regarded today as both scientifically valid, and it actively investigates the brain and circadian rhythms. This seemed more promising from a mainstream scientific perspective, (Chronobiology.com, 2020). If only some intellectual brain synchronicity between students could be achieved, this might be a mechanism to improve overall class engagement. Circatrigintan cycles recur monthly, and are around 25-35 days, (Chemeurope.com, 2020). If the Intellectual Cycle is a Circatrigintan cycle, identifying what neurological element or hormonal elements causing it would be a further scientific key to understanding. There have also been studies in chronobiology remarking on cyclical timing in nature and the wild, (Helm et al., 2020), suggesting that brain plasticity and cycle timings are impacted by other external natural elements as well. Regardless, I needed a solution fast. It was worth trying.

Viable Solution

Using student school data, my difficult class was thus matched based on the best researched Natural Biorhythms Software available, testing for a paired compatibility of students based on their respective Intellectual Cycles. What in old biorhythmic terms is deemed an "Intellectual Companion, Secretary or Business Partner". Students with heavy emotional or physically attractive cycles were thus implicitly never seated next to each other because of this type of matching. Any perfect cycle matches, such as people born on the same day, twins or any other high biorhythmic cyclical matches were thus naturally seated as far away from each other as possible. A paired seating plan was adopted, splitting seating combinations in fifteen pairs of two in a typical class of thirty. Immediately the old teacher adage of splitting twins was implicitly handled.

The combination outcomes at times seemed unusual, but were promising. What immediately stood out was that two students who sat and worked well together, were already perfectly matched intellectually. Interestingly, another student who had no friends in the class, was the only student I could not intellectually match with any other. Something I encountered repeatedly in following years. Over this layout, I then moved combination pairs appropriately for Learning Support needs. Hearing difficulties at front of class, best graded A level students in second row that I knew, and more difficult students in split positions across the room. Rule of thumb was **always keeping** intellectual biorhythmic combination pairs, and **then** moving according to specific learning needs, grading levels and teacher knowledge as an overlay. This I hoped would maximise my chances.

Along came a Friday afternoon Maths period double on a hot summer's day. Usually what would be behaviour management hell. Armed with this new seating plan, I first re-seated the entire class. The next two doubled periods (80mins) proceeded in almost perfect working silence. The change was simply astounding. My proverbial "jaw dropped to the ground". One difficult female student remarked at the end of class: "Sir, I have never worked in class so hard in my life". I was simply amazed at the outcome, and have used the technique ever since, even rectifying problem classes for other experienced teachers, in a variety of different schools now. It works, but its degree depends on who you have in the class to work with.

In one example, I was on fulltime contract in an All-Boys school, and was told of a problem class with difficult behavioural problems. No seating plan would work, so I asked if I could try my approach. An analysis of that class found seven of the students were born on the same day, including a set of twins. Immediately, I re-seated students according to this technique, and teachers ended up reporting this was "the very best of a bad bunch of seating plans". Many successes from other teachers, have since confirmed my thinking that this approach needs to be shared further.

Operational Advice

1. Do not tell anyone in your class how and why you seated them the way you did. It can be counterproductive. Just say you chose it, though I sometimes wonder about placebo effect. Be aware that consistent desks/chairs structure is highly advisable for effective use.

2. In co-educational schools for Years 7-9, split the boys and girls into two halves of the class, and pair first via sex and then by intellectual cycle. Do not seat early year boys and girls together as they often mistake intellectual friendship for something else at an early age. In single sex schools this does not obviously apply. If you have odd numbers, pair the most trusted students in boy/girl intellectual matches.

3. Keep paired combinations based on intellectual cycle, and then spread pairs using Learning Support and other overriding needs you know about. Work for **maximum** Intellectual compatibility, and **some** emotional compatibility is acceptable. Make sure biorhythmic physical cycle matching is very **minimal** to non-existent. Like a slope.

4. Make sure after intellectual matching that you seat A or B level anchor students in first three rows if you know grades. Preferably have all A level students in the second row. This gives central academic focus to the class and boosts your chances. Just keep whatever best intellectual match with them in a pair. Sometimes a C level will be placed automatically in the second row as a result. Well and good. Run with that. Just avoid seating A level students at the back of the class. Let the matching do the initial paired arrangement, and then seat B level in first row, A in second, B in third and C towards the back if you have such C level pairs. Space C pairs at the back to separate problem students even further. You usually have them present in some demographic areas.

5. Please be aware students **will** resist this seating plan over time and **will** ask you to have them be seated with their friends. They inherently know over time this seating plan approach makes them intellectually work harder. Resist this at all costs. **Do not relax seating plan vigilance!** If you give in to their requests, the students you reseat with friends will very likely suffer in engagement and marks. I have experienced this repeatedly. Be wise in reseating. Use the matching method again to readjust where required.

6. You will find some students shall totally oppose your initial seating plan with blank refusal, or even cry. A busted relationship may have already occurred outside of class. Reseat using the method. This approach has a tendency of uncovering such problem relationships. You may wish to ask what is the cause of the problem. I have seen relationships “repaired” at a later stage, by using this seating method. Those who do not wish to work in your class, because they just hate the subject, will really resist the seating plan. Isolate if needed.

7. Advise Vice-Principals that this seating technique might be useful for checking of pastoral class combinations and for possibly resolving problem classes. A combined approach with the same seating plan may sometimes work across all year level teachers. I am not sure if matching students as “biorhythmic” friends would be better in pastoral classes. Someone needs to investigate that more fully.

8. This technique is **not** a “silver bullet” **but** it works nearly always in some fashion. It does appear to have some sort of visible effect to attention spans, work focus, **and most of all minimising the amount of unnecessary chatter and talk in the classroom**. More feedback would be appreciated on overall teacher impressions. The technique needs official scientific validation. I do not proclaim it to be totally proven. It just seems to work on all the occasions I have now used it, and feedback from beta testing confirms these observations.

9. SeatMatrix has now been beta tested by many High School teachers in a variety of schools with a great deal of positive, often blind feedback, which validates the statements which have made here. It is certainly a technique to be tried when needed for difficult behavioural classes. Verifying it scientifically could be extremely difficult due to the many variables involved. It does appear to increase the overall percentage of behavioural engagement. It is probably worth a PhD study from a more practical and statistical standpoint.

10. You will notice students in seated pairs having good days and some bad days together. Some days they are working well, and other days they are quiet, tired and off the boil. If the theory holds, the paired class will have independent peaks and troughs of attention and engagement. Some pairs will work well on various days, and others the opposite. Kind of like a wave of engagement moving throughout the class. Depending on how you arrange the class you should be able to predict when this will occur and in what area of the class. That’s high-end analytical forecasting though.

11. This matching technique really assists in predicting the student with “No Friends in the Class”. Someone who has 0% or near 0% intellectual matching compatibility with anyone else in the class, will have no friends in that class. They are better off being shifted to another classroom, before the start of the academic year. Something school leaders may wish to investigate.

12. It is important to realise that birthdates used **do not** imply astrology. It is a 33-day cycle. Therefore, it could start with conception in the womb, brain development stages in the womb, or any other specific start time. The method is merely placing students together within this 33-day cycle framework. The scientific question is what physiological (e.g., brain hormonal cycle) are we dealing with specifically? This is where a definite study should be made using Teltscher’s original work as a start point.

13. You could check your own biorhythm cycles with students to find those you might need to make extra intellectual effort with, and to also seat those who are likely to cause you problems, much further away in the classroom. It could thus be used as a proof that indicates you have attempted to protect yourself in the classroom. Physically attractive teachers should be aware of this method. Some teachers have already commented they have used it in this manner.

14. Some teachers have said they are going to be trying the matching method with four students in a seating group and matching the group. I have used it to seat 3 or 4 in a row, but not in separate group seating. Any feedback using this group approach would be appreciated. It is worth investigating further. I think the same general rules would apply. Business Group work in Years 9 and 10 could certainly benefit.

15. Unless you have a very difficult behavioural class, establish your SeatMatrix Plan at the start of a Term, as per usual.

SeatMatrix Spreadsheet Instructions

1. It is highly recommended that you first copy from the original **SeatMatrix** spreadsheet and keep this file as a base from which to recopy each time you wish to create a matched class. One spreadsheet per class. Edit the newly copied spreadsheet for each class you have allocated. Give it a name in the file for the class concerned.

2. Then download a class list of full **Student Names** with their birth dates in **dd/mm/yyyy** format from your School Student System, (e.g., Eminerva or TASS software). Do this in an MS-Excel file format, if possible, for ease of copying and prior manipulation of data.

3. Arrange you class on the **Base Class List Tab** of the **SeatMatrix** software spreadsheet. This tab has no formulas. Do with it as you wish. Code your student special needs for the class as a future **manual** cross reference. You can make up whatever codes you wish. This is purely for your reference only. Additional columns in your student system may already contain this downloadable information and permits standardisation of codes within your school.

4. Once special needs coding of the **Base Class List Tab** is complete for reference, then copy the full **Student Name, Sex** columns and their **Birthdate dd/mm/yyyy** column and paste these into the **Seating Calculator Tab** of the spreadsheet in the relevant columns.

5. Once complete delete extra rows in **Seating Calculator Tab** if not needed. If you have more than 30 students, then undo and first insert an extra Excel row first and drag or copy down the entire row above which has formulas and values in the right-hand columns. Columns are highlighted with information describing those with values and formulas.

6. Once complete, copy the first **Student Name 1** of **one** unmatched student each in turn plus their **Sex** and **S1-Birthdate** and place them **at the top** of two right hand **Student Name 2** and **S2-Birthdate** column row.

7. Once completed, then copy and drag this single **Student Name 2, Sex** and **S2-Birthdate** first row **down** the second columns to match each student in the list. **Use right click, drag and copy values**. Do **not** copy series. Be careful. You need to have the **same** name, sex and birthdate for this single student matched against the rest of class. Everything will then auto update on the right columns for formulas.

8. Observe the Intellectual, Emotional and Physical traffic light columns and find a student with the **highest** Intellectual value first and the lowest Physical value towards **nothing**. The most **minimal value** in other words. The Emotional value should also be minimised below the 50-60% as well if possible and find the lowest possible **after** identifying the first two values. You should have a slope from high to low.

9. If you find Emotional is below Physical in value, that is fine. I never had much of a problem. Intellectual needs to be high as possible.

10. You can copy and list your paired matches on the **List Your Paired Output Tab**. Just do this by copying paired named across manually. Use this tab as a means of tracking students already matched. There are no formulas on this Tab. Manipulate however you wish to use it.

11. Then repeat the Steps 5-7 for another unmatched student until your paired matches in **List Your Paired Output Tab** are completed. With 30 students in a class, that means you only have to make 15 base matches in total.

12. Copy your paired names to the final **Seating Layout tab** manually for seating arrangements.

13. Print from Excel Landscape mode for **Seating Layout tab**. Adjust if you have different printers etc…

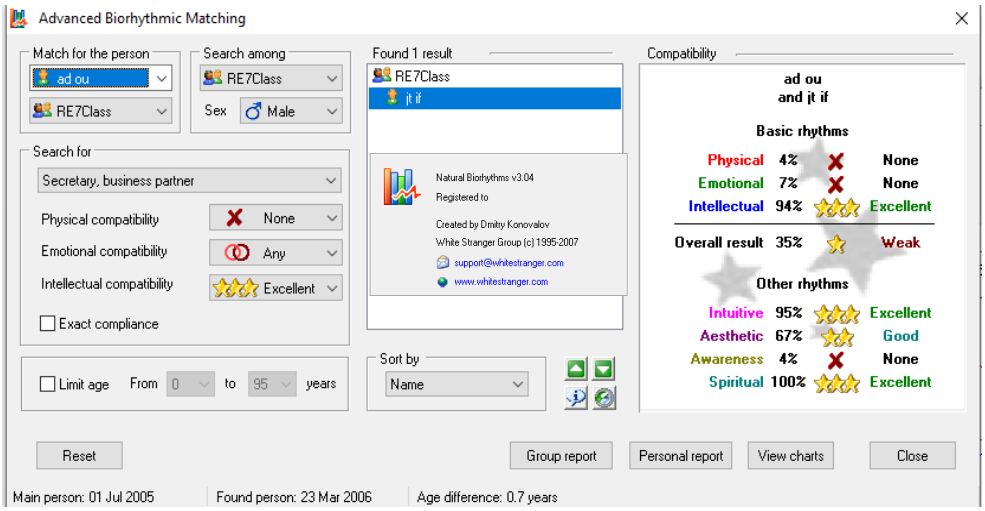
14. There are **only formulas** on the **Seating Calculator tab** in some columns, and in no other worksheet tab.

15. You only edit the yellow columns in the **Seating Calculator tab,** or add/delete FULL rows from it**.** The other tabs are all editable.

16. Each step in the process is a point for Teacher Reflection, so the need to automate further has been stopped. This permits maximum flexibility for teacher discretion and judgements

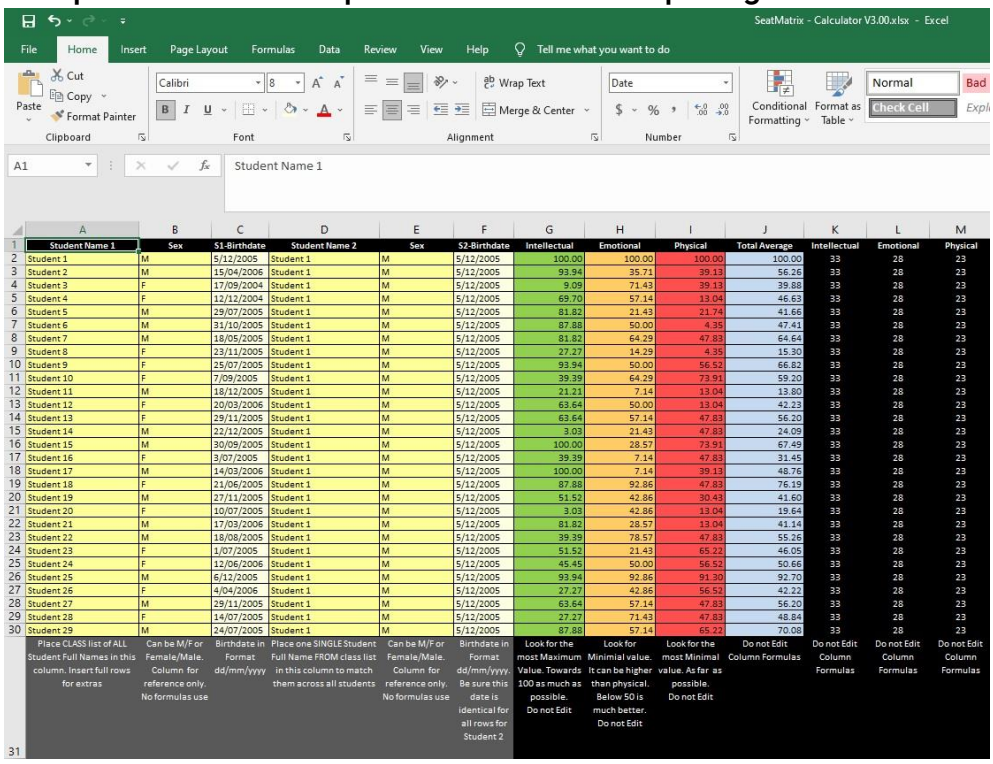
17. The goal for each student match is the highest slope from high Green Intellectual value down to low Red physical value. The lower you make Orange the better, but this is not always possible, as indeed for the other two major columns as well.

Example: Software Match – Seating Pair Match in a Standard Biorhythmic Software Product



("Advanced Biorhythms", 2020)

Example: New SeatMatrix Spreadsheet Software – Improving Bulk Class Matching – V3.00



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Student Name 1	Sex	S1-Birthdate	Student Name 2	Sex	S2-Birthdate	Intellectual	Emotional	Physical	Total Average	Intellectual	Emotional	Physical
2	Student 1	M	5/12/2005	Student 1	M	5/12/2005	100.00	100.00	100.00	100.00	33	28	23
3	Student 2	M	15/04/2006	Student 1	M	5/12/2005	93.94	35.71	39.13	56.26	33	28	23
4	Student 3	F	17/09/2004	Student 1	M	5/12/2005	9.09	71.43	39.13	39.88	33	28	23
5	Student 4	F	12/12/2004	Student 1	M	5/12/2005	69.70	57.14	13.04	46.63	33	28	23
6	Student 5	M	29/07/2005	Student 1	M	5/12/2005	81.82	21.43	21.74	41.66	33	28	23
7	Student 6	M	31/10/2005	Student 1	M	5/12/2005	87.88	50.00	4.35	47.41	33	28	23
8	Student 7	M	18/05/2005	Student 1	M	5/12/2005	81.82	64.29	47.83	64.64	33	28	23
9	Student 8	F	23/11/2005	Student 1	M	5/12/2005	27.27	14.29	4.35	15.30	33	28	23
10	Student 9	F	25/07/2005	Student 1	M	5/12/2005	93.94	50.00	56.52	66.82	33	28	23
11	Student 10	F	7/09/2005	Student 1	M	5/12/2005	39.39	64.29	73.91	59.20	33	28	23
12	Student 11	M	18/12/2005	Student 1	M	5/12/2005	21.21	7.14	13.04	13.80	33	28	23
13	Student 12	F	20/03/2006	Student 1	M	5/12/2005	63.64	50.00	13.04	42.23	33	28	23
14	Student 13	F	29/11/2005	Student 1	M	5/12/2005	63.64	57.14	47.83	56.20	33	28	23
15	Student 14	M	22/12/2005	Student 1	M	5/12/2005	3.03	21.43	47.83	24.09	33	28	23
16	Student 15	M	30/09/2005	Student 1	M	5/12/2005	100.00	28.57	73.91	67.49	33	28	23
17	Student 16	F	3/07/2005	Student 1	M	5/12/2005	39.39	7.14	47.83	31.45	33	28	23
18	Student 17	M	14/03/2006	Student 1	M	5/12/2005	100.00	7.14	39.13	48.76	33	28	23
19	Student 18	F	21/06/2005	Student 1	M	5/12/2005	87.88	92.86	47.83	76.19	33	28	23
20	Student 19	M	27/11/2005	Student 1	M	5/12/2005	51.52	42.86	30.43	41.60	33	28	23
21	Student 20	F	10/07/2005	Student 1	M	5/12/2005	3.03	42.86	13.04	19.64	33	28	23
22	Student 21	M	17/03/2006	Student 1	M	5/12/2005	81.82	28.57	13.04	41.14	33	28	23
23	Student 22	M	18/08/2005	Student 1	M	5/12/2005	39.39	78.57	47.83	55.26	33	28	23
24	Student 23	F	1/07/2005	Student 1	M	5/12/2005	51.52	21.43	65.22	46.05	33	28	23
25	Student 24	F	12/06/2006	Student 1	M	5/12/2005	45.45	50.00	56.52	50.66	33	28	23
26	Student 25	M	6/12/2005	Student 1	M	5/12/2005	93.94	92.86	91.30	92.70	33	28	23
27	Student 26	F	4/04/2006	Student 1	M	5/12/2005	27.27	42.86	56.52	42.22	33	28	23
28	Student 27	M	29/11/2005	Student 1	M	5/12/2005	63.64	57.14	47.83	56.20	33	28	23
29	Student 28	F	14/07/2005	Student 1	M	5/12/2005	27.27	71.43	47.83	48.84	33	28	23
30	Student 29	M	24/07/2005	Student 1	M	5/12/2005	87.88	57.14	65.22	70.08	33	28	23
31	Place CLASS list of ALL Student Full Names in this column. Insert full rows for extras	Can be M/F or Female/Male. Column for reference only. No formulas use	Birthdate in Format dd/mm/yyyy	Place one SINGLE Student Full Name FROM class list in this column to match them across all students	Can be M/F or Female/Male. Column for reference only. No formulas use	Birthdate in Format dd/mm/yyyy. Be sure this date is identical for all rows for Student 2	Look for the most Maximum Value. Towards 100 as much as possible. Do not Edit	Look for Minimial value. It can be higher than physical. Below 50 is much better. Do not Edit	Look for the most Minimal value. As far as possible. Do not Edit	Do not Edit Column Formulas	Do not Edit Column Formulas	Do not Edit Column Formulas	Do not Edit Column Formulas

Matching the Paired Student Slope – Maximise the Intellectual Value, Minimise the Emotional and Minimise Physical

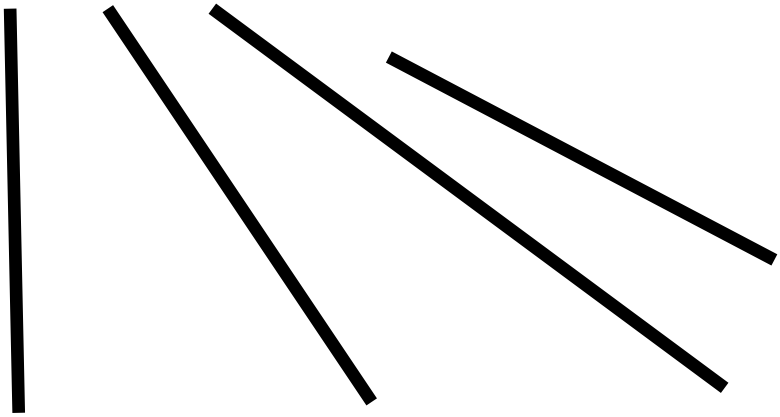
100%

Intellectual (Maximise)

Emotional (Minimise)

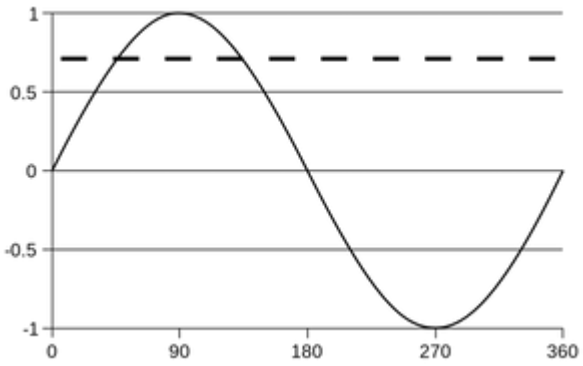
Physical (Minimise)

0%



Biorhythmic Formulas and Calculation

"Now that you are familiar with the history, let's check out how biorhythms are calculated. For starters, they are based on **sine waves**, which are oscillating curves.



A sine wave

We will focus on three formulas: the physical cycle, the emotional cycle, and the intellectual cycle. You will notice the only difference between the three is the number of days in the cycle: 23, 28, and 33.

For all of the formulas, *t* represents how many days you have been alive.

$$\text{Physical: } y = sin\left(\frac{2\pi}{23}t\right)$$

$$\text{Emotional: } y = sin\left(\frac{2\pi}{28}t\right)$$

$$\text{Intellectual: } y = sin\left(\frac{2\pi}{33}t\right)$$

Biorhythm formulas

In order to determine *t*, you need to add the following:

- Your age x 365
- The number of leap days (from the time of your birth until now)
- How many days have passed since your last birthday?", (Zundel, 2020)

SeatMatrix Testing

MS-Excel Formulas in **SeatMatrix** have been calculated using Excel functions to mirror Biorhythmic functionality in current software.

SeatMatrix Calculations were crosschecked by using sample data to verify the same output in standard Biorhythmic programs.

Important Note: The spreadsheet auto-calculates figures using today's current date () when you open it by default. You could change the formula code to check the past or future biorhythmic cycle interaction figures, but at this point, I have found this to be unnecessary.

User Feedback

- Below is some initial High School Teacher feedback from the Beta Version 1.04 Testing Phase.
- Establishing a baseline for more effective use is ultimately the observation goal, as well as reflections about student interactions.
- If you wish to add your teaching observational thoughts, please e-mail seatmatrix@symballousa.org
- Future Teacher Observations will be added to the list below.
- Teacher Reviews and Feedback **shall be kept anonymous**.
- Both positive and negative reports are most welcome.
- Remember there are no silver bullets, but only ways to minimise problems in your classroom.
- The technique is **NOT** meant to supplant your own teacher judgments. It is meant to support them.
- For example: students with special needs often have complicating factors, which you may need to accommodate differently.

SeatMatrix User 1

"Thanks Anthony, this is working well with my 7s & 9s. I will try to figure it out for my Year 10 class next term."

SeatMatrix User 2

"Works really well in Junior. It helps your thinking about the class. It gives a nice foundation to start with. I used this particularly well in my Religion classes. It has made the group work so much easier".

SeatMatrix User 3

"Thanks!!"

SeatMatrix User 4

"It's working"

SeatMatrix User 5

"Looks very professional Anthony"

SeatMatrix User 6

"Works better in the same classrooms where tables and chairs are in a consistent structure. Across multiple classrooms, students move around, and it did not help as much, and perhaps may have hindered. Needs consistent classroom furniture structure to support its use"

SeatMatrix User 7

"Trying this with groups of four to see what happens"

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