

Step 1: No Help Needed

On the Students tab, all the courses that students need to be scheduled for are presented. I use Python to count every instance of every course and deliver output letting me know how many kids need each course.

	Course	Number of Students
0	GLOBAL 9	68
1	HEALTH	68
2	ALGEBRA I	65
3	RESTORATIVE JUSTICE 1	64
4	ENGLISH 9	64
5	PE 1	64
6	CIVICS	64
7	LIVING ENVIRONMENT	63

Step 2: No Help Needed

I use Python code to determine how many sections of the classes I need, based on the limitation that each class can only fit 34 students. It returns output similar to this:

CLASS NAME	SECTION
GLOBAL 9	Section 1
GLOBAL 9	Section 2
HEALTH	Section 1
HEALTH	Section 2
ALGEBRA I	Section 1
ALGEBRA I	Section 2
RESTORATIVE JUSTICE 1	Section 1
RESTORATIVE JUSTICE 1	Section 2
ENGLISH 9	Section 1
ENGLISH 9	Section 2
PE 1	Section 1
PE 1	Section 2
CIVICS	Section 1
CIVICS	Section 2
LIVING ENVIRONMENT	Section 1
LIVING ENVIRONMENT	Section 2

Step 3: THIS IS WHERE I REALLY NEED YOUR HELP

Given the information above and the information on the “Teachers” tab of the spreadsheet, I need a simple widget to start running permutations to determine the most logical way to schedule the children. The following rules must be understood:

- Assign teachers to classes they are able to teach.
- No teacher can teach more than 5 periods in the day.
- Assume there are 8 periods in the day.
- Period 5 every day is lunch for everyone.
- No student can be scheduled for two classes at the same time.
- There may be a few instances where students cannot get the exact classes they need based on when the classes are offered, if the widget has tried everything possible and there are a few kids that need us to review, then the widget just needs to let us know and we can manually attend to those kids.

It would be nice if I could manipulate this program such that I could sometimes do different schedules like a 5 period day on A-Day and a 5 period day on B-day. Students would then take half their classes on A-day and the other classes on B-Day.

This can be fully python code that I can run or it can have sort of like a GUI that's easy to point and click. In the end, however, I need students' schedules created and printed (PDF) one per page like the attachment, teacher schedules developed and printed (PDF)