Supplementary Material A

Participating School Characteristics

School	Pupils on roll	Pupils with SEN support (%)	Pupils with EAL (%)	Pupils eligible for FSM-6 (%)
1	1002	14	93	24
2	380	21	50	28
3	632	131	57	30
4	636	10	56	28
Combined	2650	12.48	69.37	25.53

SEN = Special Educational Needs, EAL = English as Additional Language, FSM-6 = eligibility for Free School Meals currently or in the past six years
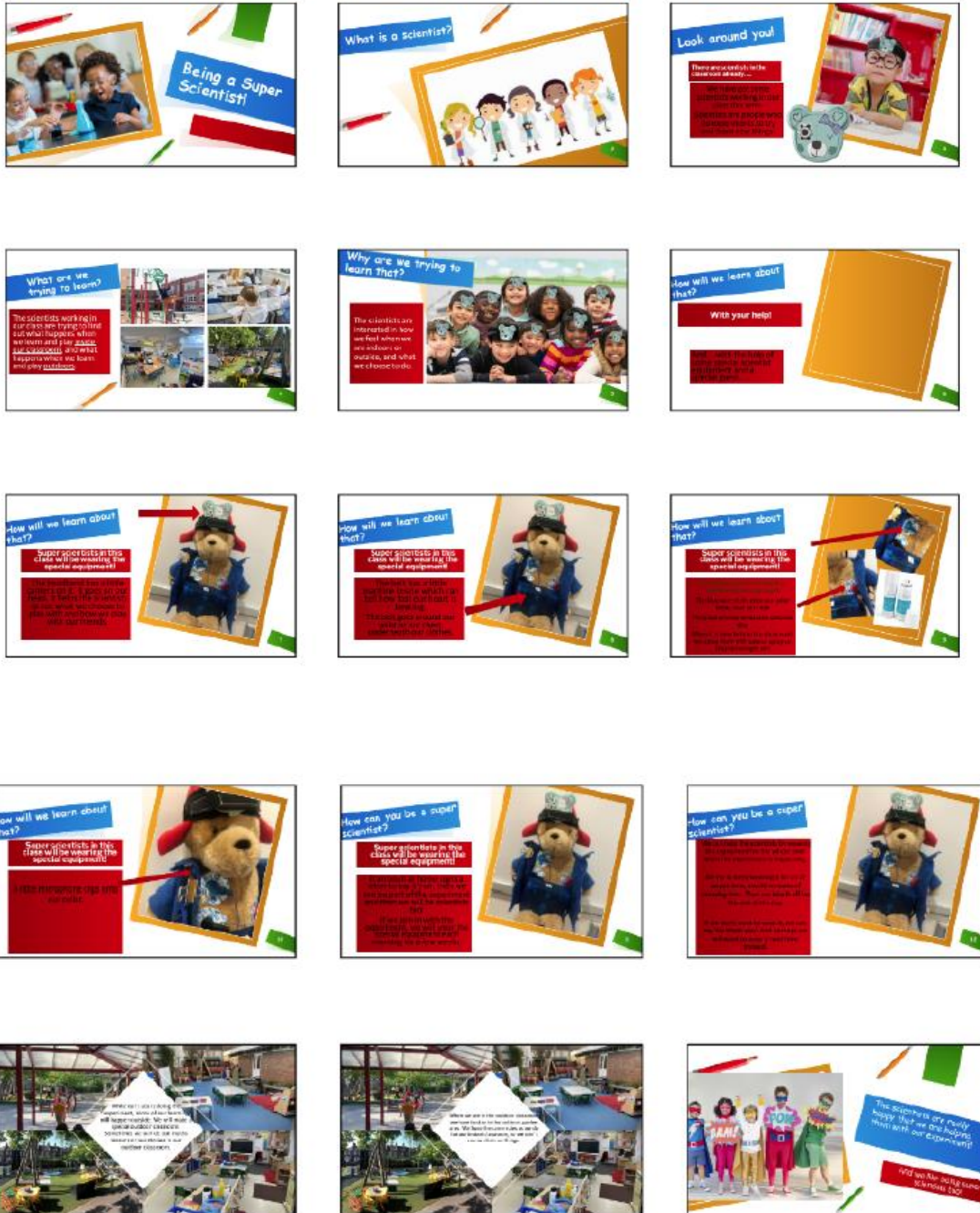
Supplementary Material B

Participant drop-out rates per school

	Total recruited	Total Participated	Drop-out rate (%)
School 1	12	8	33%
School 2	32	17	46%
School 3	40	38	5%
School 4	14	13	7%
Total	**98**	**76**	**22%**

Supplementary Material C
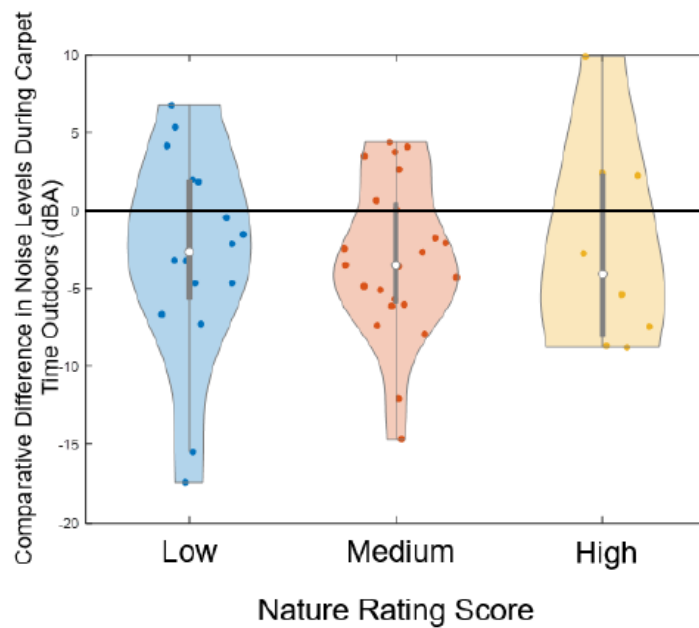

Social story read to participants prior to data collection sessions

Supplementary Material D

Table showing schedule for noise reading taken during each session

Carpet time	Beginning	Middle	End
Readings taken at (mins)	03:00, 03:20, 3:40	06:00, 06:20, 6:40	09:00, 09:20, 9:40
Choosing time			
Readings taken at (mins)	03:00, 06:00, 09:00	13:00, 16:00, 19:00	23:00, 26:00, 29:00

Supplementary Material E

Figure demonstrating relationship between different outdoor area types and noise levels during both choosing and carpet time

Note. Violin plot comparing change in noise levels during carpet time (values below 0 indicating a decrease in the outdoor condition) across different levels of nature present in each school's outdoor condition.
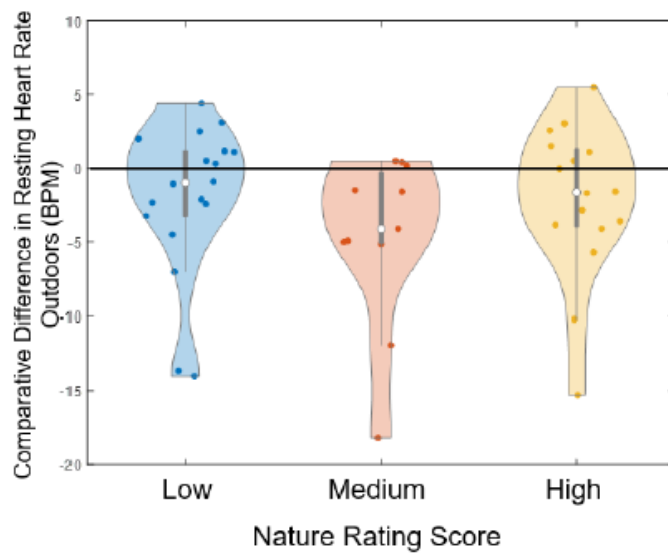
Supplementary Material F

Average noise levels in each condition across participating school

	Indoor Noise Levels (dBA)		Outdoor Noise Levels (dBA)	
	Carpet Time	Choosing Time	Carpet Time	Choosing Time
School 1	-	-	-	-
School 2	61.05	75.32	57.81	69.46
School 3	62.60	70.30	59.40	67.50
School 4	62.5	73.20	60.2	67.5
Average	**62.06**	**72.45**	**59.00**	**68.15**

Note. Noise level data collection started from school 2

Supplementary Material G

Figure demonstrating relationship between different outdoor area types and resting heart rate during carpet time.

Note. Violin plot comparing change in resting heart rate during carpet time (values below 0 indicating a decrease in the outdoor condition) across different outdoor area types with varying levels of nature present in each school's outdoor condition.

Supplementary Materials H

Full breakdown of sample sizes for each cell in the experimental designs included in study

Group	Statistical Analysis	N*		N**	
		Indoor	Outdoor	Indoor	Outdoor
ECG data	Linear mixed effects model	45	45	176	174
Activity data	Linear mixed effects model	51	51	319	282
Noise levels during carpet time	Independent Samples t-test	76	76	37	37
Noise levels during choosing time	Independent Samples t-test	76	76	38	38
ECG and noise level data	Spearman's rank-order correlation	45	45	98	112

Note. *Denote cells where N indicates number of participants included in analysis. **Denote cells where N indicates number of observational sessions included in analysis.

Supplementary Materials I

Cross validation of ECG and actigraphy data for accuracy assurance