

Supplementary Materials

Figure S1. Behavior Map of all Bio, Expressive, Restorative & Digital Play Activities.

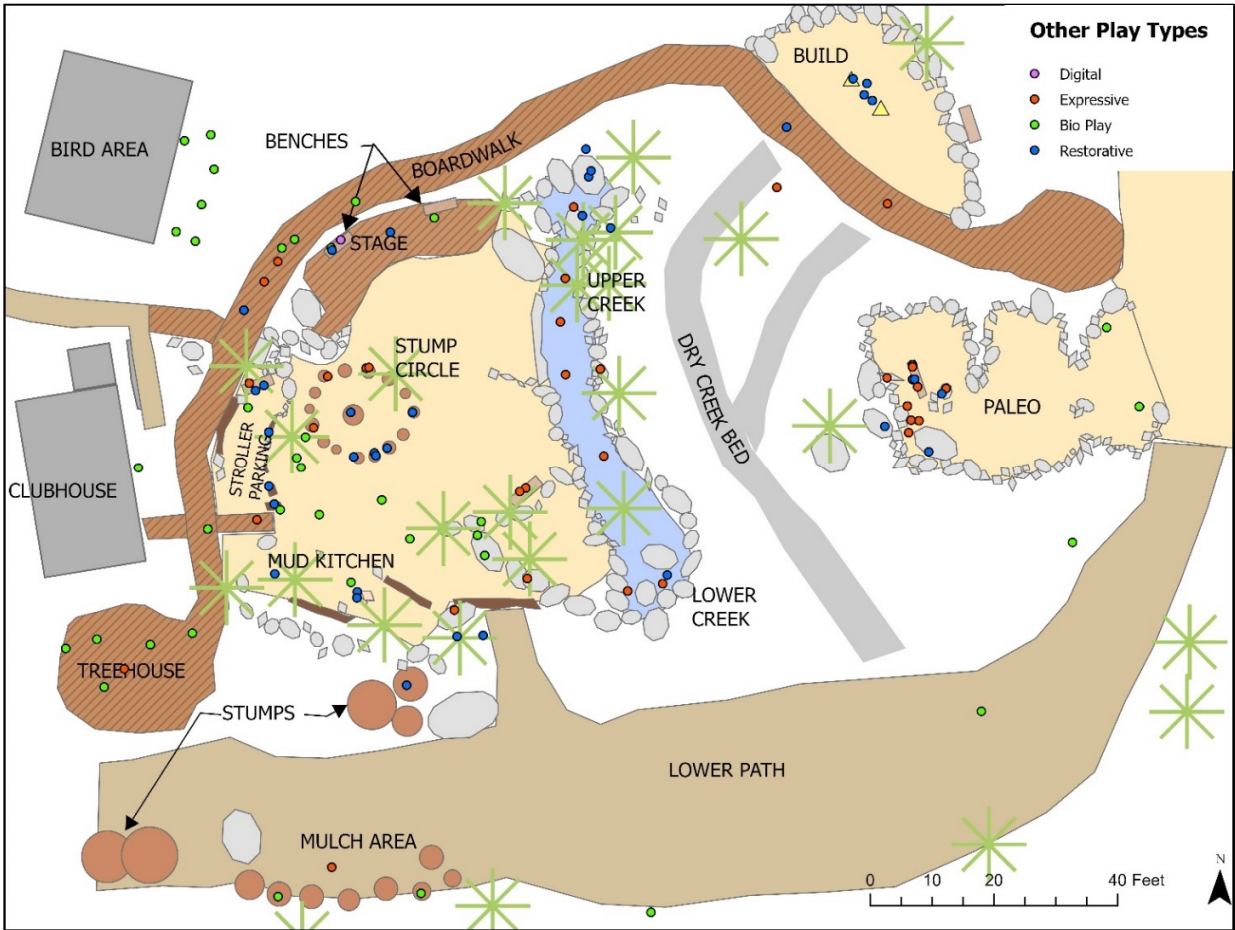


Table S1. Two-Way Associations between Outdoor Play Types and Select Demographic, Behavioral and Environmental Variables

	OUTDOOR PLAY TYPES									
	Physical	Exploratory	Imaginative	Play with Rules	Bio	Expressive	Restorative	Digital	Non-play	Total
GENDER										
Male (n)	280	249	35	38	20	10	14	1	54	701
% across all OPTs	39.9	35.5	5.0	5.4	2.9	1.4	2.0	0.1	7.7	
% within OPT	64.5	59.9	52.2	80.9	51.3	28.6	38.9	100.0	44.3	
Female (n)	154	167	32	9	19	25	22	0	68	496
% across all OPTs	31.0	33.7	6.5	1.8	3.8	5.0	4.4	0.0	13.7	
% within OPT	35.5	40.1	47.8	19.2	48.7	71.4	61.1	0.0	55.7	
AGE										
3-8 years old (n)	368	364	67	47	38	33	31	1	104	1053
% across all OPTs	34.9	34.6	6.4	4.5	3.6	3.1	2.9	0.1	9.9	
% within OPT	84.8	87.5	100.0	100.0	97.4	94.3	86.1	100.0	85.3	
0-2 years old (n)	66	52	0	0	1	2	5	0	18	144
% across all OPTs	45.8	36.1	0.0	0.0	0.7	1.4	3.5	0.0	12.5	
% within OPT	15.2	12.5	0.0	0.0	2.6	5.7	13.9	0.0	14.8	
CARS CONDENSED										
Stationary (n)	93	174	29	7	31	24	30	1	62	451
% across all OPTs	20.6	38.6	6.4	1.6	6.9	5.3	6.7	0.2	13.7	
% within OPT	21.4	41.8	43.3	14.9	79.5	68.6	83.3	100.0	50.8	
Slow (n)	158	162	24	17	6	3	5	0	25	400
% across all OPTs	39.5	40.5	6.0	4.3	1.5	0.8	1.3	0.0	6.3	
% within OPT	36.4	38.9	35.8	36.2	15.4	8.6	13.9	0.0	20.5	
Moderate-Vigorous (n)	183	80	14	23	2	8	1	0	35	346
% across all OPTs	52.9	23.1	4.0	6.6	0.6	2.3	0.3	0.0	10.1	
% within OPT	42.2	19.2	20.9	48.9	5.1	22.9	2.8	0.0	28.7	
RISK CONDENSED										
No/Low Risk (n)	117	216	47	8	35	25	27	1	103	579
% across all OPTs	20.2	37.3	8.1	1.4	6.0	4.3	4.7	0.2	17.8	
% within OPT	27.0	51.9	70.2	17.0	89.7	71.4	75.0	100.0	84.4	
Positive Risk (n)	312	199	20	39	4	10	9	0	19	612
% across all OPTs	51.0	32.5	3.3	6.4	0.7	1.6	1.5	0.0	3.1	
% within OPT	71.9	47.8	29.9	83.0	10.3	28.6	25.0	0.0	15.6	
Negative Risk (n)	5	1	0	0	0	0	0	0	0	6
% across all OPTs	83.3	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

% within OPT	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
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	OUTDOOR PLAY TYPES									
	Physical	Exploratory	Imaginative	Play with Rules	Bio	Expressive	Restorative	Digital	Non-play	Total
INVOLVED LOOSE PARTS										
Yes (n)	323	374	59	39	27	13	19	1	48	903
% across all OPTs	35.8	41.4	6.5	4.3	3.0	1.4	2.1	0.1	5.3	
% within OPT	74.4	89.9	88.1	83.0	69.2	37.1	52.8	100.0	39.3	
No (n)	111	42	8	8	12	22	17	0	74	294
% across all OPTs	37.8	14.3	2.7	2.7	4.1	7.5	5.8	0.0	25.2	
% within OPT	25.6	10.1	11.9	17.0	30.8	62.9	47.2	0.0	60.7	
INVOLVED NATURAL LOOSE PARTS										
Yes (n)	282	335	56	35	26	9	16	1	34	794
% across all OPTs	35.5	42.2	7.1	4.4	3.3	1.1	2.0	0.1	4.3	
% within OPT	65.0	80.5	83.6	74.5	66.7	25.7	44.4	100.0	27.9	
No (n)	152	81	11	12	13	26	20	0	88	403
% across all OPTs	37.7	20.1	2.7	3.0	3.2	6.5	5.0	0.0	21.8	
% within OPT	35.0	19.5	16.4	25.5	33.3	74.3	55.6	0.0	72.1	
INVOLVED MANUFACTURED LOOSE PARTS										
Yes (n)	210	229	49	37	4	6	6	1	22	564
% across all OPTs	37.2	40.6	8.7	6.6	0.7	1.1	1.1	0.2	3.9	
% within OPT	48.4	55.1	73.1	78.7	10.3	17.1	16.7	100.0	18.0	
No (n)	224	187	18	10	35	29	30	0	100	633
% across all OPTs	35.4	29.5	2.8	1.6	5.5	4.6	4.7	0.0	15.8	
% within OPT	51.6	45.0	26.9	21.3	89.7	82.9	83.3	0.0	82.0	
TOPOGRAPHY										
No/Low Slope (n)	174	222	45	7	32	19	23	1	85	608
% across all OPTs	28.6	36.5	7.4	1.2	5.3	3.1	3.8	0.2	14.0	
% within OPT	40.1	53.4	67.2	14.9	82.1	54.3	63.9	100.0	69.7	
Moderate Slope (n)	20	7	2	2	3	2	4	0	16	56
% across all OPTs	35.7	12.5	3.6	3.6	5.4	3.6	7.1	0.0	28.6	
% within OPT	4.6	1.7	3.0	4.3	7.7	5.7	11.1	0.0	13.1	
Steep Slope (n)	8	6	1	0	1	1	0	0	6	23
% across all OPTs	34.8	26.1	4.3	0.0	4.3	4.3	0.0	0.0	26.1	

<i>% within OPT</i>	<i>1.8</i>	<i>1.4</i>	<i>1.5</i>	<i>0.0</i>	<i>2.6</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>4.9</i>	
Uneven Surface (n)	232	181	19	38	3	13	9	0	15	510
<i>% across all OPTs</i>	<i>45.5</i>	<i>35.5</i>	<i>3.7</i>	<i>7.5</i>	<i>0.6</i>	<i>2.5</i>	<i>1.8</i>	<i>0.0</i>	<i>2.9</i>	
<i>% within OPT</i>	<i>53.5</i>	<i>43.5</i>	<i>28.4</i>	<i>80.9</i>	<i>7.7</i>	<i>37.1</i>	<i>25.0</i>	<i>0.0</i>	<i>12.3</i>	
Total	434	416	67	47	39	35	36	1	122	1197

OPT = Outdoor Play Type

Table S2: Associations with Outdoor Play Types for Select Demographic & Behavioral Variables using Pearson Chi2 & Fisher's Exact Test

PHYSICAL PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No Count	133	126	20	239	159	73	27	205	54	0	259
<i>Expected Count</i>	107.3	151.7	32.1	226.9	94.2	86.3	78.5	120.3	136.8	1.9	
Yes Count	154	280	66	368	93	158	183	117	312	5	434
<i>Expected Count</i>	179.7	254.3	53.9	380.1	157.8	144.7	131.5	201.7	229.2	3.1	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	16.8318	0.000***	8.3611	0.004**	130.3137	0.000***		178.0828	0.000***		
Cramer's V	0.1558		-0.1098		0.4324			0.5069			
Fisher's exact		0.000***		0.004**		0.000***			0.000***		
EXPLORATORY PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No	120	157	34	243	78	69	130	106	167	4	277
<i>Expected</i>	114.7	162.3	34.4	242.6	100.7	92.3	83.9	128.7	146.3	2	
Yes	167	249	52	364	174	162	80	216	199	1	416
<i>Expected</i>	172.3	243.7	51.6	364.4	151.3	138.7	126.1	193.3	219.7	3	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	0.6918	0.406	0.0078	0.930	60.4703	0.000***		14.8944	0.001**		
Cramer's V	0.0316		-0.0034		0.2954			0.1466			
Fisher's exact		0.431		1.000		0.000***			0.000***		
IMAGINATIVE PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No	255	371	86	540	223	207	196	275	346	5	626
<i>Expected</i>	259.3	366.7	77.7	548.3	227.6	208.7	189.7	290.9	330.6	4.5	
Yes	32	35	0	67	29	24	14	47	20	0	67
<i>Expected</i>	27.7	39.3	8.3	58.7	24.4	22.3	20.3	31.1	35.4	0.5	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	1.2315	0.267	10.5086	0.001**	3.2806	0.194		16.8951	0.000***		
Cramer's V	-0.0422		0.1231		0.0688			0.1561			
Fisher's exact		0.297		0.000***		0.183			0.000***		
PLAY W RULES	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No	278	368	86	560	245	214	187	314	327	5	646
<i>Expected</i>	267.5	378.5	80.2	565.8	234.9	215.3	195.8	300.2	341.2	4.7	
Yes	9	38	0	47	7	17	23	8	39	0	47
<i>Expected</i>	19.5	27.5	5.8	41.2	17.1	15.7	14.2	21.8	24.8	0.3	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	10.3017	0.001**	7.1435	0.008**	12.2899	0.002**		18.4574	0.000***		
Cramer's V	0.1219		0.1015		0.1332			0.1632			
Fisher's exact		0.001**		0.002**		0.002**			0.000***		

BIO PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No	268	386	85	569	221	225	208	287	362	5	654
Expected	270.8	383.2	81.2	572.8	237.8	218	198.2	303.9	345.4	4.7	
Yes	19	20	1	38	31	6	2	35	4	0	39
Expected	16.2	22.8	4.8	34.2	14.2	13	11.8	18.1	20.6	0.3	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	0.9086	0.340	3.6855	0.055+	33.771	0.000***		31.129	0.000***		
Cramer's V	-0.0362		0.0729		0.2208			0.2119			
Fisher's exact		0.403		0.075		0.000***			0.000***		
EXPRESSIVE PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No	262	396	84	574	228	228	202	297	356	5	658
Expected	272.5	385.5	81.7	576.3	239.3	219.3	199.4	305.7	347.5	4.7	
Yes	25	10	2	33	24	3	8	25	10	0	35
Expected	14.5	20.5	4.3	30.7	12.7	11.7	10.6	16.3	18.5	0.3	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	13.6866	0.000***	1.5203	0.218	17.9705	0.000***		9.3118	0.01*		
Cramer's V	-0.1405		0.0468		0.161			0.1159			
Fisher's exact		0.000***		0.296		0.000***			0.008**		
RESTORATIVE PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No	265	392	81	576	222	226	209	295	357	5	657
Expected	272.1	384.9	81.5	575.5	238.9	219	199.1	305.3	347	4.7	
Yes	22	14	5	31	30	5	1	27	9	0	36
Expected	14.9	21.1	4.5	31.5	13.1	12	10.9	16.7	19	0.3	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	6.0719	0.014*	0.0764	0.782	36.8387	0.000***		12.4906	0.002**		
Cramer's V	-0.0936		-0.0105		0.2306			0.1343			
Fisher's exact		0.015*		0.796		0.000***			0.002**		
DIGITAL PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	Female	Male	0-2 yrs	3-8 yrs	Stationary	Slow	ModVig	No/Low	Positive	Negative	
No	287	405	86	606	251	231	210	321	366	5	692
Expected	286.6	405.4	85.9	606.1	251.6	230.7	209.7	321.5	365.5	5	
Yes	0	1	0	1	1	0	0	1	0	0	1
Expected	0.4	0.6	0.1	0.9	0.4	0.3	0.3	0.5	0.5	0	
Total	287	406	86	609	252	231	210	322	366	5	693
Pearson chi2 (p)	0.7079	0.400	0.1419	0.706	1.7525	0.416		1.1538	0.562		
Cramer's V	0.032		0.0143		0.0503			0.0408			
Fisher's exact		1.000		1.000		1.000			0.472		

NON PLAY	Gender		Age		CARS (condensed)			Risk (condensed)			Totals
	<i>Female</i>	<i>Male</i>	<i>0-2 yrs</i>	<i>3-8 yrs</i>	<i>Stationary</i>	<i>Slow</i>	<i>ModVig</i>	<i>No/Low</i>	<i>Positive</i>	<i>Negative</i>	
No	219	352	68	503	190	206	175	219	347	5	571
<i>Expected</i>	236.5	334.5	70.9	500.1	207.6	190.3	173	265.3	301.6	4.1	
Yes	68	54	18	104	62	25	35	103	19	0	122
<i>Expected</i>	50.5	71.5	15.1	106.9	44.4	40.7	37	56.7	64.4	0.9	
Total	287	406	86	607	252	231	210	322	366	5	693
Pearson chi2 (p)	12.5204	0.000***	0.7486	0.387	15.9616	0.000***		85.8709	0.000***		
Cramer's V	-0.1344		-0.0329		0.1518			0.352			
Fisher's exact		0.001**		0.368		0.000***			0.000***		

+ p ~ 0.05

** p< 0.01

* p < 0.05

***p<0.001