

Contents

Introduction	vii
About the Book.....	vii
1 Supporting Distance STEM Learning for Elementary Children	1
STEM Projects Overview.....	2
How Educators Can Support Distance STEM Learning	7
How Families Can Support Distance STEM Learning	9
2 How Does Your Garden Grow?	13
Materials, Time, and Supervision.....	14
Resources to Explore and Inspire	15
Science: Growing a Plant	17
Math: Plants in a Row.....	24
Engineering: Agricultural Engineering	28
3 What's Cooking?	33
Materials, Time, and Supervision.....	34
Resources to Explore and Inspire	35
Science: Heating, Cooling, and Mixing.....	36
Math: Combining with Whole Numbers and Fractions	40
Engineering: Chemical Engineering.....	44
4 Oh My Stars!	49
Materials, Time, and Supervision.....	50
Resources to Explore and Inspire	51
Science: Sun, Moon, and Stars.....	53
Math: Place Value and Comparison.....	58
Engineering: Aerospace Engineering	62
5 How's the Weather?	65
Materials, Time, and Supervision.....	66
Resources to Explore and Inspire	67
Science: Weather Patterns	68
Math: Representing and Interpreting Weather Data	75
Engineering: Agricultural Engineering	80

6	Short Circuit	83
	Materials, Time, and Supervision	84
	Resources to Explore and Inspire	85
	Science: Electricity	86
	Math: Exploring Shape	92
	Engineering: Electrical Engineering	99
7	Catching the Vibe with Sound Waves	103
	Materials, Time, and Supervision	104
	Resources to Explore and Inspire	105
	Science: The Basics of Sound	108
	Math: Musical Connections	111
	Engineering: Communications Engineering	116
8	It's a Zoo in Here!	119
	Materials, Time, and Supervision	121
	Resources to Explore and Inspire	121
	Science: Choosing and Researching Animals	124
	Math: Measuring Length, Perimeter, and Area	128
	Engineering: Civil Engineering	135
9	Going Viral	139
	Materials, Time, and Supervision	140
	Resources to Explore and Inspire	141
	Science: Infection Inventor	142
	Math: How Sickness Spreads	146
	Engineering: Biomedical Engineering	151
10	Designing Distance Learning for Elementary STEM	155
	Extending Distance Learning	156
	In Conclusion	159
	References	160
	Works Consulted	161
	Index	165