

Table of Contents

Introduction	i–ix
What is <i>Engaging Mathematics, Volume II: Grade 8?</i>	iv
What is found in an Engaging Mathematics TEKS-based activity?	v
Texas Essential Knowledge and Skills (TEKS) Alignment Chart	vi–ix
Real Numbers.....	1–19
Real Number Relationships	2–3
Irrational Numbers, Activity 1	4–5
Irrational Numbers, Activity 2	6–7
Ordering Real Numbers, Activity 1	8–9
Ordering Real Numbers, Activity 2	10–12
Ordering Real Numbers, Activity 3	14–15
Scientific Notation, Activity 1	16–17
Scientific Notation, Activity 2	18–19
Pythagorean Theorem	20–33
Pythagorean Theorem Models, Activity 1	20–21
Pythagorean Theorem Models, Activity 2	22–23
Pythagorean Theorem, Activity 1	24–25
Pythagorean Theorem, Activity 2	26–27
Distance on a Coordinate Plane, Activity 1	28–30
Distance on a Coordinate Plane, Activity 2	32–33
Equations and Inequalities	34–67
Writing Equations from Situations, Activity 1	34–35
Writing Equations from Situations, Activity 2	36–38
Writing Situations from Equations, Activity 1	40–41
Writing Situations from Equations, Activity 2	42–43
Writing Inequalities from Situations	44–46
Writing Situations from Inequalities	48–49
Writing Equations and Inequalities from Situations, Activity 1	50–52
Writing Equations and Inequalities from Situations, Activity 2	54–55
Writing Situations from Equations and Inequalities	56–57
Modeling Equations, Activity 1	58–59
Modeling Equations, Activity 2	60–63
Solving Equations, Activity 1	64–65
Solving Equations, Activity 2	66–67
Slope and <i>y</i>-intercept	68–99
Slope, Activity 1	68–69
Slope, Activity 2	70–71
Rate of Change or Slope and <i>y</i> -intercept, Activity 1	72–73
Rate of Change or Slope and <i>y</i> -intercept, Activity 2	74–75
Rate of Change or Slope and <i>y</i> -intercept, Activity 3	76–77
Rate of Change or Slope and <i>y</i> -intercept, Activity 4	78–79
Multiple Representations, Activity 1	80–82

Multiple Representations, Activity 2	84–85
Multiple Representations, Activity 3	86–87
Multiple Representations, Activity 4	88–90
Multiple Representations, Activity 5	92–93
Intersecting Lines, Activity 1.....	94–95
Intersecting Lines, Activity 2.....	96–97
Intersecting Lines, Activity 3.....	98–99
Proportional and Non-Proportional Relationships.....	100–140
Non-Proportional Relationships, Activity 1.....	100–101
Non-Proportional Relationships, Activity 2.....	102–103
Non-Proportional Relationships, Activity 3.....	104–106
Unit Rate and Slope, Activity 1.....	108–109
Unit Rate and Slope, Activity 2.....	110–111
Unit Rate and Slope, Activity 3.....	112–113
Unit Rate and Slope, Activity 4.....	114–115
Proportional Relationships, Activity 1	116–117
Proportional Relationships, Activity 2	118–119
Direct Variation, Activity 1.....	120–121
Direct Variation, Activity 2.....	122–123
Proportional and Non-Proportional Relationships, Activity 1	124–126
Proportional and Non-Proportional Relationships, Activity 2	128–130
Proportional and Non-Proportional Relationships, Activity 3	132–133
Proportional and Non-Proportional Relationships, Activity 4	134–135
Proportional and Non-Proportional Relationships, Activity 5	136–140
Transformations	142–181
Attributes of a Dilation, Activity 1	142–144
Attributes of a Dilation, Activity 2	146–147
Attributes of a Dilation, Activity 3	148–149
Dilations on a Coordinate Plane, Activity 1	150–151
Dilations on a Coordinate Plane, Activity 2	152–153
Dilations on a Coordinate Plane, Activity 3	154–155
Measurements of Dilated Figures, Activity 1	156–157
Measurements of Dilated Figures, Activity 2	158–159
Measurements of Dilated Figures, Activity 3	160–161
Counterclockwise Rotations	162–163
Clockwise Rotations.....	164–165
Representing Transformations Algebraically, Activity 1	166–168
Representing Transformations Algebraically, Activity 2	170–172
Properties of Orientation and Congruence, Activity 1	174–175
Properties of Orientation and Congruence, Activity 2	176–178
Properties of Transformations	180–181
Angle Relationships	182–193
Parallel Lines and Transversals, Activity 1	182–183
Parallel Lines and Transversals, Activity 2	184–186

Parallel Lines and Transversals, Activity 3.....	188–189
Exterior Angles of Triangles	190–191
Angle-Angle Criterion	192–193
Three-Dimensional Shapes.....	194–219
Volume of Cylinders, Activity 1	194–195
Volume of Cylinders, Activity 2	196–197
Volume of Cylinders, Activity 3	198–199
Cylinders and Cones.....	200–201
Volume of Cones.....	202–204
Volume of Spheres.....	206–207
Volume of Cylinders, Cones, and Spheres.....	208–209
Surface Area of Prisms, Activity 1.....	210–211
Surface Area of Prisms, Activity 2.....	212–213
Surface Area of Cylinders, Activity 1	214–215
Surface Area of Cylinders, Activity 2	216–217
Surface Area of Prisms and Cylinders.....	218–219
Functions.....	220–229
Functions, Activity 1	220–221
Functions, Activity 2	222–223
Functions, Activity 3	224–226
Functions, Activity 4	228–229
Data	230–247
Bivariate Data, Activity 1	230–231
Bivariate Data, Activity 2	232–234
Trend Lines, Activity 1	236–237
Trend Lines, Activity 2	238–239
Mean Absolute Deviation, Activity 1	240–241
Mean Absolute Deviation, Activity 2	242–243
Mean Absolute Deviation, Activity 3	244–245
Random Samples	246–247
Personal Financial Literacy.....	248–263
Interest Rates and Loans	248–249
Loan Repayment.....	250–251
Growing Money Over Time	252–253
Simple vs. Compound Interest, Activity 1	254–255
Simple vs. Compound Interest, Activity 2	256–257
Payment Methods	258–259
Analyzing Financial Situations	260–261
Cost of College	262–263