



# IXL Skill Alignment

Transition to College Mathematics and Statistics alignment for LAUSD



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# Unit 1

## Interpreting Categorical Data

### Lesson 1: Comparing the Risk

Standard	IXL skills
<b>Pre-Investigation</b>	<p><b>Fractions</b></p> <ol style="list-style-type: none"> <li>1. Fractions of a number: word problems 88T</li> <li>2. Equivalent fractions KDL</li> <li>3. Write fractions in lowest terms ZGT</li> <li>4. Compare and order fractions CEY</li> <li>5. Add and subtract fractions NGL</li> <li>6. Add and subtract mixed numbers 9BE</li> <li>7. Multiply fractions PDK</li> <li>8. Multiply mixed numbers JNY</li> <li>9. Divide fractions X7A</li> <li>10. Divide mixed numbers UPF</li> <li>11. Add, subtract, multiply, and divide fractions and mixed numbers: word problems KR7</li> <li>12. Solve proportions 2ZL</li> </ol> <p><b>Percents</b></p> <ol style="list-style-type: none"> <li>13. What percentage is illustrated? D7D</li> <li>14. Understanding percents: strip models 5JV</li> <li>15. Convert fractions to percents using grid models ZDZ</li> <li>16. Convert between percents and fractions AUT</li> <li>17. Solve percent problems using strip models 9XC</li> </ol> <p><b>Decimals</b></p> <ol style="list-style-type: none"> <li>18. Decimal numbers review 27R</li> <li>19. Compare and order decimals ANM</li> <li>20. Decimal number lines BBX</li> <li>21. Round decimals R5J</li> <li>22. Add and subtract decimals BP2</li> <li>23. Multiply decimals TCU</li> <li>24. Divide decimals 6HB</li> </ol>

- 25. Add, subtract, multiply, and divide decimals: word problems TGN
- 26. Convert between percents and decimals H2F

### Graphs

- 27. Interpret bar graphs M83
- 28. Create bar graphs E45
- 29. Interpret line graphs TGQ
- 30. Create line graphs ERM
- 31. Rate of change: graphs YER
- 32. Interpret histograms 2QR
- 33. Create histograms WZU

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### Investigation 1: Summarizing and Displaying the Risk

### Numbers and operations

- 1. Convert between decimals and fractions WSD
- 2. Add and subtract rational numbers J8R
- 3. Multiply and divide rational numbers H6L

### Percents

- 4. Convert between percents, fractions, and decimals UWL
- 5. Solve percent equations 39N
- 6. Percent word problems BLW

### Data and graphs

- 7. Interpret bar graphs, line graphs, and histograms B9A
- 8. Create bar graphs, line graphs, and histograms EF6
- 9. Interpret circle graphs UHY

### Prerequisite

- 10. Add, subtract, multiply, and divide integers UNC
- 11. Evaluate numerical expressions involving integers ZFX
- 12. Evaluate variable expressions involving integers AZT

### Extension

- 13. Convert between repeating decimals and fractions AH5

14. Evaluate numerical expressions involving rational numbers 8CU
15. Evaluate variable expressions involving rational numbers M9A

### Optional

16. Relations: convert between tables, graphs, mappings, and lists of points RBG

## Investigation 2: Comparing Risk

### Percents

1. Percent of change GRG
2. Percent of change: word problems 59V
3. Percent of change: find the original amount word problems 7UW

### Fractions

4. Simplify complex fractions HYL

## Investigation 3: Design of Experiments

### Probability

1. Find probabilities using two-way frequency tables 93R
2. Find conditional probabilities using two-way frequency tables BZZ

### Statistics

3. Identify biased samples F6N
4. Experiment design BKR

## Lesson 2: A Test of Significance

### Standard

### IXL skills

## Investigation 1: Homogeneous Groups

### Ratios, rates, and proportions

1. Identify equivalent ratios 8UE
2. Write an equivalent ratio RW6
3. Solve proportions 2ZL
4. Solve proportions: word problems 8ES

### Extension

5. Scale drawings: word problems 8B7

**Investigation 2: The Chi-Squared Statistic****Prerequisite**

1. Mean, median, mode, and range MHB

**Extension**

2. Analyze the results of an experiment using simulations RLB

**Optional for Work Discrimination Supplement**

3. Identify an outlier 87L
4. Identify an outlier and describe the effect of removing it XGC

**Investigation 3: Statistical Significance****Lesson 3: The Relationship Between Two Variables**

Standard	IXL skills
<b>Investigation 1: Diagnostic Testing</b>	<b>Probability</b> <ol style="list-style-type: none"> <li>1. Calculate probabilities of events QRS</li> <li>2. Find probabilities using two-way frequency tables HGA</li> </ol> <b>Prerequisite</b> <ol style="list-style-type: none"> <li>3. Introduction to probability 9QC</li> </ol>
<b>Investigation 2: Independence</b>	<b>Probability</b> <ol style="list-style-type: none"> <li>1. Identify independent events RTZ</li> <li>2. Probability of independent and dependent events X5U</li> <li>3. Find conditional probabilities 2M4</li> <li>4. Independence and conditional probability AJC</li> <li>5. Find conditional probabilities using two-way frequency tables HGC</li> </ol>
<b>Investigation 3: The Chi-Squared Test of Independence</b>	<b>Probability distributions</b> <ol style="list-style-type: none"> <li>1. Write a discrete probability distribution RH6</li> <li>2. Graph a discrete probability distribution 5KH</li> <li>3. Expected values of random variables 3K9</li> </ol>

# Unit 2

## Functions and Modeling Change

### Lesson 1: Function Models Revisited

Standard	IXL skills
<b>Pre-Investigation</b>	<p><b>Linear functions</b></p> <ol style="list-style-type: none"> <li>1. Identify linear functions from graphs and equations VMQ</li> <li>2. Identify linear functions from tables F5G</li> <li>3. Find the slope of a graph E7D</li> </ol> <p><b>Exponents</b></p> <ol style="list-style-type: none"> <li>4. Exponents with integer bases EJ8</li> <li>5. Negative exponents SCM</li> <li>6. Multiplication with exponents HQD</li> <li>7. Division with exponents 9SS</li> <li>8. Power rule RWY</li> </ol> <p><b>Extension</b></p> <ol style="list-style-type: none"> <li>9. Find the slope from two points MD5</li> <li>10. Find a missing coordinate using slope 5C7</li> <li>11. Exponents with decimal and fractional bases 7SS</li> <li>12. Multiplication and division with exponents HPK</li> <li>13. Evaluate expressions using properties of exponents LRR</li> </ol> <p><b>Optional for % Discount Supplement</b></p> <ol style="list-style-type: none"> <li>14. Percent of a number: tax, discount, and more SKZ</li> <li>15. Find the percent: tax, discount, and more VQX</li> <li>16. Multi-step problems with percents HBJ</li> </ol>
<b>Investigation 1: Modeling Atmospheric Change</b>	<p><b>Linear functions</b></p> <ol style="list-style-type: none"> <li>1. Slope-intercept form: find the slope and y-intercept R5T</li> <li>2. Slope-intercept form: graph an equation UWB</li> </ol>

3. Slope-intercept form: write an equation from a graph 9GW
4. Slope-intercept form: write an equation A42
5. Slope-intercept form: write an equation from a word problem HWM
6. Linear equations: solve for y T5F
7. Write linear functions: word problems 9RQ

### Exponential functions

8. Evaluate an exponential function D6H
9. Exponential growth and decay: word problems UKG
10. Identify linear and exponential functions from graphs UEC

### Linear and exponential functions

11. Identify linear and exponential functions from tables LZP
12. Write linear and exponential functions JGJ

### Logarithms

13. Convert between exponential and logarithmic form: rational bases TPA
14. Evaluate logarithms GBR
15. Power property of logarithms 7T3

### Extension

16. Slope-intercept form: write an equation from a table SSE
17. Compound interest: word problems QSF
18. Describe linear and exponential growth and decay S7T
19. Convert between natural exponential and logarithmic form 5KM
20. Convert between exponential and logarithmic form: all bases 8RK
21. Evaluate natural logarithms XG9

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## Investigation 2: Modeling Change in Business Prospect

### Relations and functions

1. Evaluate a function: plug in an expression VNZ
2. Add and subtract functions 45B

3. Interpret the graph of a function: word problems STU
4. Interpret functions using everyday language U98

### Quadratic functions

5. Characteristics of quadratic functions: graphs HW8
6. Characteristics of quadratic functions: equations YJZ
7. Complete a function table: quadratic functions LFV

### Linear, quadratic, and exponential functions

8. Identify linear, quadratic, and exponential functions from graphs DHB
9. Identify linear, quadratic, and exponential functions from tables SP5
10. Write linear, quadratic, and exponential functions AFA

### Extension

11. Multiply functions 8PM

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## Investigation 3: Modeling Periodic Change

### Trigonometric functions

1. Find properties of sine functions 2EK
2. Write equations of sine functions from graphs FGW
3. Write equations of sine functions using properties JDH
4. Graph sine functions 9NS
5. Graph translations of sine functions LCN
6. Find properties of cosine functions F8Y
7. Write equations of cosine functions from graphs 4G8
8. Write equations of cosine functions using properties N6X
9. Graph cosine functions KXG
10. Graph translations of cosine functions M5K
11. Graph sine and cosine functions A7V
12. Graph translations of sine and cosine functions 9D7



**Prerequisite**

13. Convert between radians and degrees EDC

**Investigation 4: Function Families****Linear**

1. Find the slope of a linear function W67
2. Graph a linear function LSG
3. Write the equation of a linear function PBE

**Power/Exponential**

4. Domain and range of exponential functions: graphs ANC
5. Domain and range of exponential functions: equations DZE
6. Domain and range of exponential and logarithmic functions GLL
7. Evaluate exponential functions LWE
8. Match exponential functions and graphs PCX

**Quadratic**

9. Write a quadratic function in vertex form W2Q
10. Graph quadratic functions in standard form HMW
11. Match quadratic functions and graphs AU8
12. Write a quadratic function from its vertex and another point YGV
13. Characteristics of quadratic functions: graphs WMS
14. Characteristics of quadratic functions: equations L8C
15. Graph a quadratic function S9G
16. Solve a quadratic equation by factoring CJC
17. Write a quadratic function from its zeros G2Q

**Trigonometric**

18. Find properties of sine functions NVY
19. Write equations of sine functions from graphs TJH
20. Write equations of sine functions using properties SMV
21. Graph sine functions HP2
22. Graph translations of sine functions 6PG

- 23. Find properties of cosine functions JZV
- 24. Write equations of cosine functions from graphs 7MS
- 25. Write equations of cosine functions using properties KVG
- 26. Graph cosine functions HE5
- 27. Graph translations of cosine functions RGG
- 28. Graph sine and cosine functions C8N
- 29. Graph translations of sine and cosine functions NVC

**Inverse**

- 30. Find values of inverse functions from tables YLX
- 31. Find values of inverse functions from graphs Z5C
- 32. Find inverse functions and relations ZRQ

**Prerequisite**

- 33. Domain and range 78A
- 34. Evaluate functions PS2
- 35. Find values using function graphs FS8
- 36. Complete a table for a function graph W5Z
- 37. Solve a quadratic equation using the zero product property TRU
- 38. Identify inverse functions 9KT

**Extension**

- 39. Solve exponential equations using common logarithms 9F2
- 40. Solve exponential equations using natural logarithms KVL
- 41. Solve logarithmic equations I BXU
- 42. Solve logarithmic equations II RLX

## Lesson 2: Customizing Models by Translation and Reflection

Standard	IXL skills
<b>Investigation 1:</b> Vertical Translation	<p><b>Linear functions</b></p> <ol style="list-style-type: none"> <li>Standard form: find x- and y-intercepts 8SN</li> <li>Standard form: graph an equation U6U</li> </ol> <p><b>Quadratic functions</b></p> <ol style="list-style-type: none"> <li>Transformations of quadratic functions 6YS</li> <li>Graph quadratic functions in vertex form C7T</li> <li>Find the maximum or minimum value of a quadratic function KRZ</li> </ol> <p><b>Absolute value functions</b></p> <ol style="list-style-type: none"> <li>Complete a function table: absolute value functions 2DH</li> <li>Graph an absolute value function TD2</li> <li>Domain and range of absolute value functions: graphs NV7</li> <li>Domain and range of absolute value functions: equations FCY</li> </ol> <p><b>Function transformations</b></p> <ol style="list-style-type: none"> <li>Translations of functions L92</li> <li>Function transformation rules R7X</li> <li>Vertical translations of functions TZM</li> </ol>
<b>Investigation 2:</b> Reflection Across the X-axis	<p><b>Function transformations</b></p> <ol style="list-style-type: none"> <li>Reflections of functions across the x-axis CNS</li> </ol>
<b>Investigation 3:</b> Horizontal Translation	<p><b>Function transformations</b></p> <ol style="list-style-type: none"> <li>Horizontal translations of functions JN8</li> </ol>

## Lesson 3: Customizing Models by Stretching and Compressing

Standard	IXL skills
<b>Investigation 1:</b> Vertical Stretching and Compressing	<p><b>Function transformations</b></p> <ol style="list-style-type: none"> <li>Vertical dilations of absolute value functions 9MF</li> </ol>

**Investigation 2:** Horizontal Stretching and Compressing**Function transformations**

1. Dilations of functions NNY

**Extension**

2. Transformations of functions RSN
  3. Describe function transformations KT8
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