



# TRAC Modules alignment to Michigan Educational Standards- Math

|  | Code     | Motion Module                                      |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
|--|----------|--|---------------------------------|--|--|------------------------------------|---|--------------------------------------|--|--|--|--|--|--|--|--|--|
|  |          | Momentum Demonstration 1: Conservation of Momentum | Momentum Activity 1: Bump-n-Run | Momentum Activity 2: Calculated Collisions | Momentum Activity 3: Building your own TMS | Impulse Demonstration 1: Egg Catch | Impulse Demonstration 2: Impulse Pendulum | Impulse Activity 1: Stop that Truck! |  |  |  |  |  |  |  |  |  |
| <b>Quantitative Literacy and Logic (L)</b>                           | <b>L</b> |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| <b>Reasoning About Numbers, Systems, and Quantitative Situations</b> | L1       |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Number Systems and Number Sense                                      | L1.1     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Representations and Relationships                                    | L1.2     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Counting and Probabilistic Reasoning                                 | L1.3     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| <b>Calculation, Algorithms, and Estimation</b>                       | L2       |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Calculation Using Real and Complex Numbers                           | L2.1     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Sequences and Iteration  | L2.2     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| <b>Measurement and Precision</b>                                     | L3       |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Measurement Units, Calculations, and Scales                          | L3.1     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Understanding Error  | L3.2     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| <b>Mathematical Reasoning, Logic and Proof</b>                       | L4       |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Mathematical Reasoning   | L4.1     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Language and Laws of Logic   | L4.2     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |
| Proof  | L4.3     |  |                                 |  |  |                                    |   |                                      |  |  |  |  |  |  |  |  |  |

|   |             | <b>Motion Module</b>                         |                                    |   |  |                              |                                     |   |  |  |  |  |
|---|-------------|--|------------------------------------|---|--|------------------------------|-------------------------------------|---|--|--|--|--|
|   | <b>Code</b> | Momentum Demo 1:<br>Conservation of Momentum | Momentum Activity 1:<br>Bump-n-Run | Momentum Activity 2:<br>Calculated Collisions | Momentum Activity 3:<br>Building your own<br>TMS | Impulse Demo 1:<br>Egg Catch | Impulse Demo 2:<br>Impulse Pendulum | Impulse Activity 1: Stop<br>that Truck! |  |  |  |  |
| <b>Algebra and Functions</b>                                    | <b>A</b>    |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| <b>Expressions, Equations, and Inequalities</b>                 | <b>A1</b>   |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Construction, Interpretation, and Manipulation of Expressions   | A1.1        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Solutions of Equations and Inequalities                         | A1.2        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| <b>Functions</b>  | <b>A2</b>   |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Definitions, Representations, and Attributes of Function        | A2.1        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Operations and Transformations                                  | A2.2        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Families of Functions   | A2.3        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Lines and Linear Functions                                      | A2.4        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Exponential and Logarithmic Functions                           | A2.5        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Quadratic Functions   | A2.6        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Power Functions   | A2.7        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Polynomial Functions  | A2.8        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Rational Functions  | A2.9        |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Trigonometric Functions   | A2.10       |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| <b>Mathematical Modeling</b>                                    | <b>A3</b>   |  |                                    |   |  |                              |                                     |   |  |  |  |  |
| Models of the Real-World Situations Using Families of Functions | A3.1        |  |                                    |   |  |                              |                                     |   |  |  |  |  |

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| <b>Geometry and Trigonometry</b>  | <b>G</b>    |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| <b>Figures and their Properties</b>                                     | <b>G1</b>   |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Lines and Angles; Basic Euclidean and Coordinate Geometry               | G1.1        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Triangles and Their Properties  | G1.2        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Triangles and Trigonometry  | G1.3        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Quadrilaterals and Their Properties                                     | G1.4        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Other Polygons and Their Properties                                     | G1.5        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Circles and Their Properties  | G1.6        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Conic Sections and Their Properties                                     | G1.7        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Three-Dimensional Figures   | G1.8        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| <b>Relations Between Figures</b>  | <b>G2</b>   |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Relations Between Area and Volume Formulas                              | G2.1        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Relations Between Two-Dimensional and Three-Dimensional Representations | G2.2        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Congruence and Similarity   | G2.3        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Coordinate Representations  | G2.4        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| <b>Transformations of Figures in the Plane</b>                          | <b>G3</b>   |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Distance-preserving Transformations: Isometries                         | G3.1        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Shape-preserving Transformation: Dilations and Isometries               | G3.2        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |

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| <b>Statistics and Probability</b>                      | <b>S</b>    |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| <b>Univariate Data – Examining Distributions</b>       | <b>S1</b>   |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Producing and Interpreting Plots                       | S1.1        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Measures of Center and Variations                      | S1.2        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| The Normal Distribution                                | S1.3        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| <b>Bivariate Data – Examining Relationships</b>        | <b>S2</b>   |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Scatter Plots and Correlation                          | S2.1        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Linear Regression                                      | S2.2        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| <b>Samples, Surveys, and Experiments</b>               | <b>S3</b>   |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Data Collection and Analysis                           | S3.1        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Statistical Process Control *                          | S3.2*       |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| <b>Probability Models and Probability Calculations</b> | <b>S4</b>   |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Probability  | S4.1        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |
| Application and Representations                        | S4.2        |  |                                 |  |  |                                    |   |                                      |  |  |  |  |