

Model-Eliciting Activities (MEAs) Library

MEAs below are available upon request

Model-Eliciting Activities (MEAs)

[Amusement Park MEA Teacher Materials](#)

[Amusement Park MEA Teacher Materials pdf1](#)

[Amusement Park MEA Teacher Materials.pdf2](#)

[Amusement Park MEA Teacher Materials.pdf3](#)

Key question: How can you devise an optimal amusement park schedule for a class of 22 students that have to be placed in five groups based on their ride preferences, location of the rides, and availability of quick ride tickets?

Grade level: 5th– 12th

Common Core Math grade level connections: 4th and 7th

Main Strands: Number and Operations, Data analysis, Problem Solving, and Communication.

Connections: Theme parks and Routing.

[Ancient Crocodile MEA Teacher Materials](#)

[Ancient Crocodile MEA Teacher Materials pdf](#)

Key question: How do you predict how big an ancient prehistoric beaver was based on knowing the size of their teeth and knowing the measurements of beavers today?

Grade level: 5th– 10th

Common Core Math grade level connections: 5th, 7th, and high school (Algebra)

Main Strands: Measurement, Algebra, Biology, Problem Solving, and Communication.

Connections: Archaeology

[Big foot_MEA_Teacher_Materials](#)

[Big foot_MEA_Teacher_Materials pdf](#)

Key question: How do you develop a method for finding a person's height when the only information you have is a copy of their footprint and the stride length?

Grade level: 5th– 9th

Common Core Math grade level connections: 3rd – high school (Functions, Statistics & Probability)

Main Strands: Measurement, Algebra, Problem Solving, and Communication.

Connections: Life Science and Forensics.

[BIGFOOT MEA Teacher Materials](#)

[BIGFOOT MEA Teacher Materials](#)

Key question: How do you develop a method for finding a creature/person's height when the only information you have is a copy of their footprint and the stride length?

Grade level: 5th- 9th

Common Core Math grade level connections: 3rd – high school (Functions, Statistics & Probability)

Main Strands: Measurement, Algebra, Problem Solving, and Communication.

Connections: Life Science and Forensics.

[Big_Lawn_Pays_Off_MEA_Teacher_Materials](#)

[Big_Lawn_Pays_Off_MEA_Teacher_Materials pdf](#)

Key question: How can you park as many cars as possible on a lawn while having enough room for cars to get out when the sports event is over?

Grade level: 5th- 12th

Common Core Math grade level connections: 3rd-7th and high school (Geometry)

Main Strands: Measurement, Geometry, Algebra, Problem Solving, and Communication.

Connections: Small Business.

[Big Ten Football_MEA_Teacher_Materials](#)

[Big Ten Football_MEA_Teacher_Materials pdf](#)

Key question: How do you decide which Big Ten football team is the sole conference champion?

Grade level: 3rd- 9th

Common Core Math grade level connections: 4th and 6th

Main Strands: Number and Operations, Algebra, Problem Solving, and Communication

Connections: Sports

[Bridge_MEA_Teacher_Materials pdf1](#)

[Bridge_MEA_Teacher_Materials pdf 2](#)

[Bridge_MEA_Teacher_Materials pdf3](#)

[Bridge_MEA_Teacher_Materials pdf4](#)

Microsoft word document available upon request (file too large to post)

Key question: What general procedures are the best to use to choose a bridge type to build across any span and how can Mn/Dot use this procedure to replace other bridges in Minnesota? The I-35W bridge collapse is used as a motivating example for the need to replace or repair bridges.

Grade level: 6th-10th

Common Core Math grade level connections: 6th

Main Strands: Geometry, Number and Operations, Engineering, Problem Solving, and Communication

Connections: Transportation, Architecture, and Government Funding

[Catering_Thanksgiving_Dinner_MEA_Teacher_Materials](#)
[Catering_Thanksgiving_Dinner_MEA_Teacher_Materials pdf](#)

Key question: How do you make a plan to get all food on the table at the same time for 18 people having a Thanksgiving dinner?

Grade level: 5th-12th

Common Core Math grade level connections: 3rd, 6th, and 7th

Main Strands: Number and Operations, Algebra, Problem Solving, and Communication

Connections: FACS and Holidays

[Climate_Model_MEA_Teacher_Materialspdf 1](#)

[Climate_Model_MEA_Teacher_Materials pdf2](#)

[Climate_Model_MEA_Teacher_Materials pdf3](#)

Microsoft word document available upon request (file was too large to post)

Key question: How do you evaluate and rank each climate model and develop a method for making an overall ranking of the models through analyzing the simulation results from each model and an observed record?

Grade level: 6th-12th

Common Core Math grade level connections: 4th, 6th,7th, and high school (Statistics and Probability)

Main Strands: Number and Operations, Data Analysis, Probability and Statistics, Problem Solving, and Communication

Connections: Climate change

[Coffee Cup MEA teacher materials](#)

[Coffee Cup MEA teacher materials pdf](#)

Key question: How do you develop a manufacturing process to minimize the amount of wasted materials when making coffee cup bottoms and sidewalls for a local coffee shop?

Grade level: 7th-12th

Common Core Math grade level connections: 4th, 7th, 8th, and high school (Geometry)

Main Strands: Geometry, Problem Solving, and Communication

Connections: Manufacturing, Business, and Marketing

[Condo Pricing_MEA_Teacher_Materials](#)

[Condo Pricing_MEA_Teacher_Materials pdf](#)

[Condo_Pricing_MEA_data](#)

Key question: How do you create a method to compute an estimated price of condominiums based on features such as square footage, number of bedrooms, floor level in the building, and river view?

Grade level: 6th-12th

Common Core Math grade level connections: 6th, 8th, and high school (Algebra)

Main Strands: Number and Operations, Data Analysis, Algebra, Probability and Statistics, Problem Solving, and

Communication

Connections: Real Estate, Economics, and Business

[Countdown Clock MEA Teacher Materials](#)

[Countdown Clock MEA Teacher Materials pdf](#)

Key question: How do you generate a numeric display circuit to display any number for a countdown clock that will be used with Metro Transit?

Grade level: 1st-8th

Common Core Math grade level connections: Kindergarten, 1st, 2nd, 3rd, and 4th

Main Strands: Number and Operations, Geometry, Problem Solving, and Communication

Connections: Transportation and Electrical Engineering

[Counting_Caribou_MEA_Teacher_Materials](#)

[Counting_Caribou_MEA_Teacher_Materials pdf](#)

Key question: How do you develop a procedure for estimating population numbers of caribou herds by using given aerial photographs of caribou herds?

Grade level: 5th-12th

Common Core Math grade level connections: 3rd, 6th, 7th, and high school (Statistics and Probability)

Main Strands: Number and Operations, Life Science, Data Analysis, Probability and Statistics, Problem Solving, and Communication

Connections: Department of Fish and Game

[Dream Team MEA Teacher Materials](#)

[Dream Team MEA Teacher Materials pdf](#)

Key question: How do you develop a procedure for deciding which basketball team is better when the teams played in different decades?

Grade level: 6th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (Statistics and Probability)

Main Strands: Data Analysis, Probability and Statistics, Problem Solving, and Communication

Connections:Sports

[Energy Sources_MEA_Teacher_Materials pdf1](#)

[Energy Sources_MEA_Teacher_Materials pdf2](#)

[Energy Sources_MEA_Teacher_Materials pdf3](#)

[energy sources MEA data](#)

Microsoft word document available upon request (file too large to post)

Key question:What are the most promising, sustainable, and helpful energy sources to invest in for the future?

Grade level: 5th-12th

Common Core Math grade level connections: 5th, 6th, 8th, and high school (Statistics and Probability)

Main Strands: Algebra, Probability and Statistics, Problem Solving, and Communication

Connections: Renewable energy, non-renewable energy, global issues, and science

[Evolution_Tree_Teacher_Materials](#)

Key question: How do you create an evolutionary tree for DNA fragments contained in fossilized samples?

Grade level: 10th-12th

Common Core Math grade level connections: 7th

Main Strands: Life Science, Biology, Science and Technology, Problem Solving, and Communication

Connections: DNA

[Extreme Hiking_MEA_Teacher_Materials](#)

[Extreme Hiking_MEA_Teacher_Materials pdf](#)

Key question: How do you create signals or codes to communicate without writing and talking with others at the bottom of the trail in a competition?

Grade level: 3rd-8th

Common Core Math grade level connections: none

Main Strands: Problem Solving and Communication

Connections: Binary Secret Code, Smoke Signals, and Electromagnetic Signals

[Fastest Runner_MEA_Teacher_Materials](#)

[Fastest Runner_MEA_Teacher_Materials pdf](#)

Key question: How do you decide the world's fastest runner?

Grade level: 6th-12th

Common Core Math grade level connections: 6th, 7th, and high school (Number and Quantity)

Main Strands: Algebra, Problem Solving, Communication

Connections: Sports and Physics

[Giant Sequoia_MEA_Teacher_Materials](#)

[Giant Sequoia_MEA_Teacher_Materials pdf](#)

Key question: How do you decide which conditions are the best for growing sequoia trees in a greenhouse?

Grade level: 4th-6th

Common Core Math grade level connections: 5th and 6th

Main Strands: Number and Operations, Problem Solving, and Communication

Connections: Horticulture

[Historic_Hotel_Casino_MEA_Teacher_Materials](#)

[Historic_Hotel_Casino_MEA_Teacher_Materials pdf](#)

Key question: How do you price rooms in a historic casino/hotel to maximize profit?

Grade level: 6th-high school

Common Core Math grade level connections: 4th, 5th, 6th, 7th, and high school (Functions, number and quantity, and algebra)

Main Strands: Algebra, Number and Operations, Problem Solving, and Communication

Connections: Business

[Historic_Hotel_MEA_Teacher_Materials](#)

[Historic_Hotel_MEA_Teacher_Materials pdf](#)

Key question: How do you price rooms in a historic hotel to maximize profit?

Grade level: 6th-high school

Common Core Math grade level connections: 4th, 5th, 6th, 7th, and high school (Functions, number and quantity, and algebra)

Main Strands: Algebra, Number and Operations, Problem Solving, and Communication

Connections: Business

[Housing Base Prices_MEA_Teacher_Materials](#)

[Housing Base Prices_MEA_Teacher_Materials pdf](#)

[Housing_Base_Prices_MEA_Data](#)

Key question: How do you create a predicting model for the base prices of each home in any city as a “how-to” guidebook for incoming residents who want to get a good buy on housing?

Grade level: 9th-12th

Common Core Math grade level connections: 8th and high school (algebra, functions and statistics and probability)

Main Strands: Algebra, Number and Operations, Probability and statistics, Problem Solving, and Communication

Connections: Real Estate and Business

Hurricane MEA teacher materials available upon request (file too large to post)

Key question: Using data provided on cyclones and locations, how can you come up with recommendations for a location for a new resort for a company in Australia?

Grade level: 4th-8th

Common Core Math grade level connections: 4th and 6th

Main Strands: Number and Operations, Data Analysis, Earth Science, Problem Solving, and Communication

Connections: Business, Geography, History, Real Estate, and Weather

[International Foods_MEA_Teacher_Materials](#)

[International Foods_MEA_Teacher_Materials pdf 2](#)

Microsoft word file available upon request (file too large to post)

Key question: How do you create a schedule for the efficient preparation of dishes in an international buffet?

Grade level: 6th-12th

Common Core Math grade level connections: 3rd, 6th, and 7th

Main Strands: Number and Operations, Algebra, Problem Solving, and Communication

Connections: FACS, Cultural Traditions, and Catering

[Just_in_Time_MEA_Teacher_Materials](#)

[Just_in_Time_MEA_Teacher_Materials pdf](#)

[just_in_time_data](#)

Key question: How do you come up with a procedure for selecting a delivery company for a small technology manufacturing company to use based on the number of minutes late their deliveries arrive?

Grade level: 4th-10th

Common Core Math grade level connections: 3rd, 4th, 6th, 7th, and high school (Statistics and Probability

Main Strands: Number and Operations, Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Technology, Manufacturing, Shipping, and Business

[Labor Dispute Gets Stinky MEA Teacher Materials](#)

[Labor Dispute Gets Stinky MEA Teacher Materials pdf](#)

Key question: How do you develop a new scheduling plan for a city's 30 sanitation workers so that the trash can be picked up at a rate that meets the trash production of the city and the city does not have to spend additional dollars on hiring more sanitation workers?

Grade level: 6th-12th

Common Core Math grade level connections: 6th, 7th, and high school (Algebra and functions)

Main Strands: Algebra, Problem Solving, and Communication

Connections: Business, city planning, and sanitation

[Lawnmower MEA Teacher Materials](#)

[Lawnmower MEA Teacher Materials pdf](#)

Key question: How do you decide which 4 job candidates from a list of 14 to hire from a lawn care company that has closed, based on hours they had previously worked, the distance they had driven on their lawnmowers, and which type of lawn they had mowed?

Grade level: 3rd-10th

Common Core Math grade level connections: 3rd, 4th, 6th, and 8th, and high school (functions and statistics and probability)

Main Strands: Algebra, Data Analysis, Problem Solving, and Communication

Connections: Business, landscaping, job market, and management

[Lighting_MEA_Teacher_Materials](#)

[Lighting_MEA_Teacher_Materials pdf](#)

Key question: How do you create a practical, aesthetically pleasing, and effective outdoor lighting design of an outdoor area of a campus?

Grade level: 5th-11th

Common Core Math grade level connections: 5th, 6th, and 7th

Main Strands: Geometry, Engineering, Problem Solving, and Communication

Connections: Electrician and Security

[Lynx_Population_MEA_Teacher_Materials](#)

[Lynx_Population_MEA_Teacher_Materials.pdf](#)

Key question: How can data and information on the bald eagle and gray wolf, who were protected under the Endangered Species Act, be used to predict the future population of lynx in Minnesota?

Grade level: 7th-11th

Common Core Math grade level connections: 5th, 6th, 7th, 8th, and high school (functions, statistics and probability)

Main Strands: Algebra, Nature of Science and Engineering, Life Science, Problem Solving, and Communication

Connections: Endangered Species Act, Population growth, and Environments

[Meteorology_Madness_MEA_Teacher_Materials](#)

[Meteorology_Madness_MEA_Teacher_Materials.pdf](#)

Key question: How can groups use meteorologist instruments such as maps to make weather forecasts?

Grade level: 3rd-8th

Common Core Math grade level connections: 6th

Main Strands: Number and Operations, Problem Solving, and Communication

Connections: Meteorology

[Mini Golf Teacher Materials.pdf1](#)

[Mini Golf Teacher Materials.pdf2](#)

Mini golf word document available upon request (file too large to post)

Key question: How do you lay out a miniature golf course in a building of specified dimensions so that the end of each miniature golf hole lines up with the beginning of the next hole?

Grade level: 4th-10th

Common Core Math grade level connections: 3rd, 4th, 6th, 7th, and high school (Geometry)

Main Strands: Number and Operations, Measurement, Geometry, Problem Solving, and Communication

Connections: Sports and Engineering Design

[Mystery Powder MEA Teacher Materials](#)

[Mystery Powder MEA Teacher Materials.pdf](#)

Key question: What are the types and orders of tests that you think will be the most efficient way to determine a type of unknown powder?

Grade level: 7th-11th

Common Core Math grade level connections: none

Main Strands: Chemistry, Problem Solving, and Communication

Connections: Forensics and FBI

[NanoRoughness_MEA_Teacher_Materials pdf 1](#)

[NanoRoughness_MEA_Teacher_Materials pdf 2](#)

[NanoRoughnessExtensionActivity](#)

Microsoft word file of MEA available upon request (file too large to post)

Key question: How do you measure roughness of the Atomic Force Microscopy images of the nanoscale material?

Grade level: 9th-12th

Common Core Math grade level connections: high school (number and quantity, statistics and probability, and algebra)

Main Strands: Engineering, Nanotechnology, Problem Solving, and Communication

Connections: Stereology, Topology, Business, and Manufacturing

[On_Time_Arrival_MEA_Teacher_Materials](#)

[On_Time_Arrival_MEA_Teacher_Materials pdf](#)

Key question: How do you develop a ranking system to determine which airlines are more likely to arrive on time when the information you have is number of minutes late for five airlines departing from Minneapolis-St. Paul (MSP) International Airport?

Grade level: 4th-9th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (statistics and probability)

Main Strands: Algebra, Data Analysis, Problem Solving, and Communication

Connections: Air Travel

[Oregon Rain MEA Teacher Materials](#)

[Oregon Rain MEA Teacher Materials pdf](#)

Key question: How do you develop a procedure to decide which state is wetter, based on data on the states and from precipitation maps?

Grade level: 3rd-8th

Common Core Math grade level connections: 6th, 7th, 8th, and high school

Main Strands: Number and Operation, Algebra, Data Analysis, Measurement, Problem Solving, and Communication

Connections: Weather and Geography

[Paper_Airplane_MEA_Teacher_Materials pdf1](#)

[Paper_Airplane_MEA_Teacher_Materials pdf 2](#)

[Paper_Airplane_MEA_Teacher_Materials pdf3](#)

[Paper Airplane High fliers: 5 great paper airplane designs |](#)

Microsoft word document of MEA available upon request (file too large to post)

Key question: How do you create a fair judging scheme for a paper airplane contest when looking for the most accurate paper airplane and the best floater?

Grade level:5th-12th

Common Core Math grade level connections: 5th, 6th, and high school (statistics and probability)

Main Strands: Number and Operation, Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Forces, Motion, and Airplane Design

[Pelican Colonies MEA Teacher Materials](#)

[Pelican Colonies MEA Teacher Materials pdf](#)

Key question: How do you determine the number of nests at a pelican colony, which can contain hundreds or even thousands of nests, based on aerial photographs and information about the size and shape of each site?

Grade level:5th-12th

Common Core Math grade level connections: 5th, 6th, and high school (statistics and probability)

Main Strands: Number and Operation, Measurement, Algebra, Statistics and Probability, Biology, Problem Solving, and Communication

Connections: US Fish and Wildlife Service and Population Estimation

[Phone Plans_MEA_Teacher_Materials](#)

[Phone Plans_MEA_Teacher_Materials pdf](#)

Key question: How do you select the cheapest long distance phone plan to best meet a family's needs?

Grade level:3rd -8th

Common Core Math grade level connections: 5th, and high school (Algebra, functions, statistics and probability)

Main Strands: Number and Operation, Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Money Management

[Quilt_Problem_MEA_Teacher_Materials](#)

[Quilt_Problem_MEA_Teacher_Materials pdf](#)

Key question: How do you develop a procedure, that includes a method to determine the correct layout and measurements, to construct a template for each of the pieces in a quilt design?

Grade level:5th-12th

Common Core Math grade level connections: 5th, 6th, and high school (Geometry)

Main Strands: Number and Operation, Geometry, Measurement, Problem Solving, and Communication

Connections: FACS

[Robot Art MEA Teacher Materials \(k-3rd\)](#)
[Robot Art MEA Teacher Materials \(k-3rd\) pdf](#)
[Robot Art MEA Teacher Materials](#)
[Robot Art MEA Teacher Materials pdf](#)
[Robot art MEA followup activity](#)

Key question: What set of instructions should you give to a robot so that it can draw a certain type of picture?

Grade level:K-10th

Common Core Math grade level connections: 4th, 5th, 6th, 7th, and high school (Geometry)

Main Strands: Geometry, Measurement, Problem Solving, and Communication

Connections: Robotics, Electrical Engineering, Art, and Graphics

[Rush Popcorn and Network Routing _MEA_Teacher_Materials](#)
[Rush Popcorn and Network Routing _MEA_Teacher_Materials pdf](#)

Key question: How do you develop a delivery route system to quickly deliver popcorn? What are the best places for Internet Exchange Points to maximize network speed?

Grade level:6th-10th

Common Core Math grade level connections: 5th, 6th, and high school (Statistics and Probability)

Main Strands: Geometry, Algebra, Number and Operations, Problem Solving, and Communication

Connections: Delivery Routes, Geography, and Information Routing

[Rush Popcorn and Network Routing \(younger ages\)_MEA_Teacher_Materials](#)
[Rush Popcorn and Network Routing \(younger ages\)_MEA_Teacher_Materials pdf](#)

Key question: How do you develop a delivery route system to quickly deliver popcorn? What are the best places for Internet Exchange Points to maximize network speed?

Grade level:2nd-5th

Common Core Math grade level connections: 5th, 6th, and high school (Statistics and Probability)

Main Strands: Geometry, Algebra, Number and Operations, Problem Solving, and Communication

Connections: Delivery Routes, Geography, and Information Routing

[snowflake_MEA_Teacher_Materials](#)
[snowflake_MEA_Teacher_Materials pdf](#)

Key question: How can you write instructions on how to fold and cut a piece of paper to make a snowflake that would occur in nature?

Grade level: 3rd-8th

Common Core Math grade level connections: 3rd and 4th

Main Strands: Geometry, Problem Solving, and Communication

Connections: Science

[soccer_ball_layout_MEA](#)
[soccer_ball_layout_MEA pdf](#)

Key question: How do you create a procedure that maximizes the number of hexagons that can be placed on material of given dimensions to minimize the amount of wasted material while manufacturing soccer balls?

Grade level: 5th-10th

Common Core Math grade level connections: 5th, 6th, and 7th

Main Strands: Geometry, Engineering, Problem Solving, and Communication

Connections: Sports

[Softball_MEA_Teacher_Materials](#)
[Softball_MEA_Teacher_Materials pdf](#)

Key question: How do you develop a system that will make fair teams for girls playing softball when the information given for each player includes coaches' comments, and measures for throwing, batting, and running

Grade level: 6th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (statistics and probability)

Main Strands: Number and Operations, Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Sports

[Summer_Jobs_MEA_Teacher_Materials](#)
[Summer_Jobs_MEA_Teacher_Materials pdf](#)

Key question: How do you develop a productive management scheme in order to decide who to rehire for summer job positions when reviewing employees' records from last year?

Grade level: 6th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (statistics and probability)

Main Strands: Number and Operations, Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Theme Parks and Business

[Summer_Reading_MEA Teacher Materials](#)
[Summer_Reading_MEA Teacher Materials pdf](#)

Key question: How do you create a procedure for deciding the winner of a summer reading contest based on the number of books read, grade of the student, the variety of books, the difficulty of the books, the length of the books, and the quality of written book reports?

Grade level: 4th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (statistics and probability)

Main Strands: Number and Operations, Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Literature and Library

[Survivor MEA-Teacher-Materials](#)
[Survivor MEA-Teacher-Materials.pdf](#)

Key question: How can you use a scale model to build a shelter based on three criteria?

Grade level: 3rd -7th

Common Core Math grade level connections: 3rd, 5th-7th

Main Strands: Estimation, mathematical reasoning, proportional reasoning, and problem solving

Connections: Science and pop culture

[Switch_Problem_MEA_Teacher_Materials](#)
[Switch_Problem_MEA_Teacher_Materials.pdf](#)

Key question: How do you create an electrical circuit diagram for a two-way switch?

Grade level: 8th-12th

Common Core Math grade level connections: none

Main Strands: Electrical Engineering, Problem Solving, and Communication

Connections: Electrical Circuits

[Tiny_Toys_MEA_Teacher_Materials](#)
[Tiny_Toys_MEA_Teacher_Materials.pdf](#)

Key question: How do you design packages for different sizes of toys, boxes, and packaging paper to be able to wrap as many toys as possible in each package?

Grade level: 5th-10th

Common Core Math grade level connections: 5th, 6th, and high school (Number and Quantity and Geometry)

Main Strands: Geometry, Engineering, Problem Solving, and Communication

Connections: Manufacturing

[Track_Field_Camp_MEA_Teacher_Materials](#)
[Track_Field_Camp_MEA_Teacher_Materials.pdf](#)

Key question: How do you develop a system that will make fair teams for track and field events based on the data collected from track and field athletes?

Grade level: 5th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (Statistics and Probability)

Main Strands: Number and Operations, Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Sports

[Trash_Trouble_MEA_Teacher_Materials_](#)
[Trash_Trouble_MEA_Teacher_Materials_.pdf](#)
[Trash Trouble data](#)

Key question: How do you create a procedure or formula for predicting the amount of trash the U.S. will produce in the year 2015?

Grade level: 5th-10th

Common Core Math grade level connections: 5th, 6th, 8th, and high school (functions, Statistics and Probability)

Main Strands: Algebra, Statistics and Probability, Problem Solving, and Communication

Connections: Recycling and History

[Volleyball_MEA_Teacher_Materials](#)

[Volleyball_MEA_Teacher_Materials pdf part 1](#)

[Volleyball_MEA_Teacher_Materials pdf part 2](#)

[Volleyball_MEA_Teacher_Materials pdf part 3](#)

Key question: How do you develop a system that will make fair teams in order to have more competition in the volleyball summer camp's tournament based on the information about some of the players from tryouts and from the coaches?

Grade level: 5th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (Statistics and Probability)

Main Strands: Algebra, Number and Operations, Statistics and Probability, Problem Solving, and Communication

Connections: Sports

[Water Shortage MEA \(MEA available upon request: file too large to post\)](#)

Key question: What country should Cyprus import water from and what are the most important factors to consider to help make recommendations for future water needs?

Grade level: 4th-8th

Common Core Math grade level connections: 4th, 5th, 6th, and 7th

Main Strands: Number and Operations, Earth Science Problem Solving, and Communication

Connections: Geography, World Trade, and International Relations

[walking works wonders MEA Teacher Materials](#)

[walking works wonders MEA Teacher Materials pdf](#)

Key question: How can students use existing data on calories burned per minute based on several speeds and inclines of a treadmill to make a general procedure for predicting the calories burned per minute for any speed or angle of incline?

Grade level: 5th-12th

Common Core Math grade level connections: 5th, 6th, and 8th

Main Strands: Algebra, Problem Solving, and Communication

Connections: Exercise and Health

[Wind_Chill_MEA_Teacher_Materials](#)

[Wind_Chill_MEA_Teacher_Materials.pdf](#)

Key question: How do you develop a method for predicting wind chill temperatures and determining what the map for wind chill temperatures will look like, specifically for the state of Minnesota when the temperatures and wind speeds are known?

Grade level: 5th-10th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (statistics and probability)

Main Strands: Number and Operations, Representations, Problem Solving, and Communication

Connections: Climate and Meteorology

[Wind Turbine MEA](#) (File available upon request: too large to post)

Key question: How do you determine where to place a wind turbine?

Grade level: 8th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (statistics and probability and number and quantity)

Main Strands: Algebra, Engineering, Problem Solving, and Communication

Connections: Alternative Energy, Business, and Bird Migration

[Winter_Programs_for_Sale_MEA_Teacher_Materials](#)

[Winter_Programs_for_Sale_MEA_Teacher_Materials.pdf](#)

Key question: How do you create a method to predict the number of programs that need to be printed out for an international event when the attendees are people from many countries and who speak different languages.

Grade level: 6th-12th

Common Core Math grade level connections: 5th, 6th, 7th, and high school (statistics and probability)

Main Strands: Number and Operations, Statistics and Probability, Problem Solving, and Communication

Connections: Sporting events and Event Planning
