

**MSSEF**  
Middle School Division



Massachusetts



**2015 Middle School Manual**

Sponsored by **Cabot Corporation**





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Optical Society of America/New England Section

#### In Appreciation

Worcester Technical High School, Worcester



## ABOUT THE MSSEF STATEWIDE SCIENCE FAIRS

### MIDDLE SCHOOL DIVISION

The Massachusetts State Science & Engineering Fair, Inc. (MSSEF) hosts two annual statewide Science & Engineering Fairs for students with the most outstanding research and invention projects from across the state. The MSSEF Middle School Science Fair is an annual one-day showcase event and competition for qualifying students in grades 6, 7, and 8 attending public, private, parochial schools or home schooled in the Commonwealth. The MSSEF Middle School Science Fair is sponsored by Cabot Corp., Boston and hosted by Worcester Technical High School. Administrative services are provided by the University of Massachusetts Medical School, Worcester. The MSSEF Middle School Fair is one of the two statewide fair programs under the auspices of Massachusetts State Science & Engineering Fair, Inc. (MSSEF). The other science fair is for high school students and held annually on the MIT campus in Cambridge.

Entrants have spent months developing their projects, and at these culminating year-end events, they exhibit their projects to their peers, a team of judges and the public. This experience provides a unique opportunity for students to actively engage in the “real world” professional practices of scientists and engineers while investigating a question or problem in which he or she is interested.

Students may work on their project individually or as part of a team of two or three members. Students with the top 40 winning projects from each of the MA Regional Science Fairs may enter the MSSEF State Science Fair. Regional Science Fairs are held in the following six regions: North Adams, Worcester, Fall River, Lowell, Weston and Boston. In addition, each middle school in Massachusetts may send/enter one project to the State Science Fair. Check [the MSSEF website](http://massscifair.com/fairs/regional/ms-contacts) for regional information (*http://massscifair.com/fairs/regional/ms-contacts*).

All required safety forms and student registration forms, described in the Research and Registration Forms section of this Manual, are also available on the [MSSEF website](http://massscifair.com/fairs/regional/ms-contacts): “The Fairs” tab, and then on drop-down menu click on Regional Fairs/Middle School Contacts (*http://massscifair.com/fairs/regional/ms-contacts*). Required forms must be submitted by the dates included in the Timelines section of this Manual.

**Note:** The location of the student’s school determines which will be the correct Regional Science Fair.

2014

65th Annual  
Massachusetts State



science +  
engineering  
Fair

Saluting Our **2014**

**Sponsors,  
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April 15, 2014

Celebrating



**65** Years

Inspiring Tomorrow's  
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## biogen idec FOUNDATION

Supporting STEM Education. Science is exciting! That's the message Biogen Idec seeks to impart to the numerous school-age children we help teach and inspire. The long-term ability of our company and our industry to achieve breakthroughs in biotechnology and explore cutting-edge science and medicine depends on the drive, dedication, creativity and educational excellence of future scientists.

## EMC<sup>2</sup>

As a leading high-technology company and employer headquartered in Hopkinton, MA., EMC Corporation relies on an innovative and skilled workforce to compete in the global economy. EMC is committed to investing time, talent and financial resources to engage students and encourage science, technology, engineering and mathematics education as the foundation needed for the technology innovation and engineering workforce of tomorrow, in Massachusetts, and around the world.

## GFCT Gelfand Family Charitable Trust

Gelfand Family Charity Trust strives to provide hands-on STEM enrichment for middle- and high-school students. One of the most effective ways to accomplish that mission is through the support of the Massachusetts State Science & Engineering Fair. Visit us at [www.gfct.us](http://www.gfct.us).



Intel is transforming the lives of millions by working with countries, communities, and schools worldwide to bring the resources and solutions needed for advancing education. Intel collaborates with governments and policy-makers to turn their vision into reality.

Technology that brings quality education to more people, while sustaining local communities and economies, is Intel's unwavering commitment. Over the past decade, Intel has invested over \$1 billion dollars and close to 3 million employee volunteer hours to improve teaching and learning environments in 70+ countries.



The University of Massachusetts Boston is Boston's only public university. Our College of Science and Mathematics offers a full spectrum of science and mathematics degrees, including our newest four-year degrees in computer and electrical engineering. Located on Boston Harbor, we have developed unique research expertise in coastal environmental sciences, conservation biology, and green chemistry. Our active research faculty offers you both a solid foundation in experimental research and a warm introduction to the science community. We serve more than 16,000 students in our eleven colleges and graduate schools. Each year, UMass Boston offers a full scholarship to the Massachusetts State Science & Engineering Fair winner who attends our university. Visit us at [www.umb.edu](http://www.umb.edu).



Founded in 1865 in Worcester, Mass., WPI is one of the nation's first engineering and technology universities. Its 14 academic departments offer more than 50 undergraduate and graduate degree programs in science, engineering, technology, business, the social sciences, and the humanities and arts, leading to bachelor's, master's and doctoral degrees. WPI's talented faculty work with students on interdisciplinary research that seeks solutions to important and socially relevant problems in fields as diverse as the life sciences and bioengineering, energy, information security, materials processing, and robotics. Students also have the opportunity to make a difference to communities and organizations around the world through the university's innovative Global Perspective Program. There are more than 35 WPI project centers throughout North America and Central America, Africa, Australia, Asia, and Europe.



At Cabot, our commitment to sustainability extends beyond our manufacturing facilities. We want to make a positive and lasting difference in the communities where we operate. A vital part of this commitment is evidenced through our philanthropic activities, which give priority to programs that educate young people in the fields of science and technology. As one of the world's leading chemical companies, we are continually working on solving complicated problems in transportation, infrastructure, consumer products and the environment. We are passionate about providing opportunities to young people who will join us in solving the challenges put before us today and in the future.



Founded in 1878, Fish & Richardson is a leading global law firm unlike any other law firm in the world. With over 400 attorneys and technology specialists, the firm is one of the largest practicing IP strategy and counseling, IP litigation, and business litigation. As a law firm that has helped great innovators and entrepreneurs protect their intellectual property, we have a keen interest in promoting science education, and look forward to working with the next century of great innovators.



Genzyme has developed a strategic giving program to support science education, access to healthcare, and other unmet needs in communities where Genzyme has a significant business presence. From promoting basic science to raising awareness of the biotechnology industry, Genzyme strongly supports programs that help build excitement and enthusiasm about science education. We are also committed to promoting better understanding of health issues and to increasing the accessibility of health programs.



MIT has been the host of the annual Massachusetts State Science & Engineering Fair since its inception in 1949. Congratulations, MSSEF, on your 65th Anniversary!



Wheaton College offers an exceptional curriculum in the liberal arts and sciences that encourages independent exploration and innovative problem solving. The college promotes the study of math and science through partnerships with Battelle, Raytheon and the Southeast Alliance Pipeline project. The college recently unveiled its new Mars Center for Science and Technology – a Gold LEED-certified building featuring 23 research labs and rooms for cross-disciplinary study. Wheaton offers an annual merit scholarship to a MSSEF winner who earns admission to the college. Since 2000, Wheaton scholars have earned three Rhodes and over 70 Fulbrights, amongst other awards.

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**EXECUTIVE DIRECTOR**

Cora Beth Abel  
Tel: 617-491-1508  
abel@scifair.com

**DIRECTOR OF CORPORATE DEVELOPMENT**

Eleanor A. Tishler  
Tel: 888-437-3247  
etishler@scifair.com



We are grateful to our supporters – companies, universities, foundations, individuals and professional organizations, for their help over the past 65 years in advancing inquiry-based learning and science fair programs throughout Massachusetts.

Generous contributions from our sponsors enable us to invest in our schools, communities and children. Working together, we will continue to inspire future generations of science and engineering leaders, build science literacy for all students, and open pathways to college and new careers for students in high-needs communities.

Massachusetts State Science & Engineering Fair, Inc. (MSSEF) is incorporated in the Commonwealth of Massachusetts as a not-for-profit corporation and is a Federal tax-exempt organization under Federal law 501c(3). Federal Tax Exempt Number: 04-2707499



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Massachusetts State Science & Engineering Fair, Inc. • [scifair.com](http://scifair.com)  
955 Massachusetts Avenue, #350, Cambridge, MA 02139 • 617.491.1500



## INFORMATION FOR TEACHERS

### Choosing a Project

Students' projects should be of an experimental nature –either investigating a research question or solving a design challenge. Although judges consider the aesthetics of a student's exhibit, the main areas for evaluation are the scientific or engineering design approach, and the thought processes used in completing the project. While the topic is important, the most critical aspect is the manner in which the student explores and manages the project. A simple project can offer a great experimental challenge to the imaginative student. The role of the teacher, mentor or parent should be one of guidance, encouragement and, as needed, constructive criticism. In some cases, supervising a safety-related component of the project will be required.

### The Student's Research Plan

Prior to beginning an independent research project for a regional or state science fair, each student is required to complete a Research Plan (Forms 1A and 1B) for teacher approval. Some projects may require additional Forms if the project involves human subjects (Form C) or if it requires a supervisor (Form D). All required forms are then sent to the Regional Safety Review Committee (RSRC) for approval. [Contact information for the RSRCs](#) is found in the Regional Contacts section of this Manual and is also on the MSSEF website. The RSRC must approve each student's research plan before she/he may begin the project. Once approved, the RSRC will return these forms to the student who will then submit the forms along with the Registration Form if they are invited to participate in the MSSEF (statewide) Middle School Science Fair. If during project completion the research plan changes significantly, a new research plan must be resubmitted. Any project that has not received approval by the RSRC will not be eligible to compete at the State or Regional Level. Research Plan Forms 1A, 1B, Form C & Form D are found in the Research and Registration Forms section and on the [MSSEF website](http://www.massscifair.com/sites/default/files/assets/2014%20Middle%20School%20Forms.pdf) (<http://www.massscifair.com/sites/default/files/assets/2014%20Middle%20School%20Forms.pdf>).

For questions about research approvals that cannot be answered by the RSRC, contact:

Sandy Mayrand, Co-Director of the MSSEF Science & Engineering Fair - Middle School Division  
c/o Regional Science Resource Center  
UMASS Medical School  
222 Maple Avenue, Rose Gordon Bldg.  
Shrewsbury, MA 01545  
E. Sandy Mayrand, [sandy.mayrand@gmail.com](mailto:sandy.mayrand@gmail.com)



## Research Regulations

### 1. Students' Science Fair projects may not involve, at any stage of the project, the following:

- \* Blood products, fresh tissue, teeth or bodily fluids
- \* Nonhuman vertebrate animals and their parts, exception eggs
- \* Ingestion or inhalation of any substance by humans subjects (no smelling/wafting or eating/chewing of ANYTHING)—NOTHING in or on parts of mouth—including but not limited to teeth, tongue, lips.
- \* Pathogenic agents\*
- \* Recombinant DNA
- \* Carcinogenic or mutagenic chemicals
- \* Compressed gas (including, but not limited to CO<sub>2</sub>)
- \* Controlled substances\*
- \* Explosive chemicals
- \* Hazardous substances or devices (including, but not limited to BB guns, paint ball guns, potato cannons, air cannons)
- \* High voltage equipment
- \* Highly toxic chemicals
- \* Lasers (any strength)
- \* Ionizing radiation X-rays or nuclear energy
- \* Radioactive materials (except non-ionizing, naturally occurring materials)

### ***\*FURTHER EXPLANATIONS***

#### \* Controlled Substances

Controlled substances, including DEA-classed substances, prescription drugs, alcohol and tobacco are not allowed.

#### Pathogenic Agents

- \* Pathogenic agents are disease causing, or potential disease-causing organisms such as bacteria, viruses, viroids, prions, rickettsia, fungi, mold and others.
- \* Organisms collected, isolated and/or cultured from any environment (e.g., air, soil) are considered potentially pathogenic and experiments using these procedures will not be allowed.
- \* Raw or partially processed human/animal waste is considered to contain potentially pathogenic agents.

Please refer any safety questions to:

MSSEF Middle School Safety Review Committee  
Karin Lebeau, 508 856-1529, or  
karin.lebeau@umassmed.edu  
Sandy Mayrand, [sandy.mayrand@gmail.com](mailto:sandy.mayrand@gmail.com)

### 2. All human research projects must have an Informed Consent Form (Form C) attached.

\* All human research projects-- including surveys, professional tests questionnaires, and studies in which the human subject used is also the researcher -- require Regional Science Review Committee (RSRC) approval. Copies of standardized and/or student prepared tests, surveys, etc. to be used must also be attached to the Research Plan for approval. Questions 1, 2, and 3 on the Informed Consent Form must be filled out by the student researcher before submission to the RSRC for approval.

\* After safety approval, Informed Consent Form (C) must be signed by all subjects involved in human research projects prior to the experimentation. Copies of all signed Informed Consent Forms must be

submitted with the Registration Form to enter the MSSEF statewide Science Fair. If a participant/human subject is under 18 years old, the parent/guardian signature is required.

### **3. Experiments with non-pathogenic microorganisms\***

All projects with non-pathogenic microorganism must have a Designated Supervisor Form (Form D) completed and submitted for RSRC approval.

#### **Experiments with any non-pathogenic organisms**

All projects with any non-pathogenic organisms may only be conducted in a laboratory setting (not in the home) with the following capabilities:

- \* The laboratory work is to be supervised by an individual with general training in microbiology.
- \* Standard practices for sterile technique must be observed.
- \* Work is to be done on an open bench or fume hood.
- \* Purchased microorganisms must be identified and certified as non-pathogenic from the supply house with full name of microorganism, source of purchase and catalog number.
- \* Lab coats must be worn.
- \* Culture plates/tubes of bacteria must be sealed and not opened in the laboratory after culturing and growth.
- \* Sub-culturing is not allowed.
- \* Decontamination must be achieved by either chemical disinfectants or steam autoclaving.
- \*Two exceptions: Baker's and Brewer's yeast do not need Form D.

### **4. Special Safety Concerns**

Other situations such as use of power tools, chemicals, etc. will require adult supervision of the middle school student's project and need to be documented on Form D, Designated Supervisor.



## PROJECT DISPLAY GUIDELINES

Students must adhere to all display guidelines provided in this Manual. If the Middle School State Safety Review Committee considers the presence or operation of any equipment or material to be dangerous or unsafe, it shall have the right to prohibit the presence or operation of such equipment or material. Exhibitors may demonstrate the safe use of materials through photographs, videotapes, charts, diagrams and other simulations.

All Science Fair participants must adhere to the safety aspects of their projects as follows:

- Projects must fit into a 40" x 26" table space.\*\* Wall space for posters is not available. Students must design their exhibits so that all posters, charts and displays are free standing.  
\*\*Due to the popularity of projects needing electricity, these projects will get less than 40" depending on amount of projects\*\*
- No laser pointers allowed.
- Glass is prohibited from display area but may be either encased in a break-resistant container or replaced by a break-resistant container. The exception is glass light bulbs. Mercury thermometers are prohibited.
- No liquids may be displayed.
- Knives and other sharp objects may not be displayed.
- Microorganisms may not be displayed.
- Drugs, over-the-counter medications, antibiotics, and vitamins may not be displayed.
- All power driven parts must be suitably guarded to prevent unauthorized or accidental access.
- Access to electrical outlets is limited, so please bring a heavy-duty/three-pronged extension cord. Please check the appropriate space on the registration card if electricity is needed.
- All exhibits that require an external source of electricity for operation must be designed for a standard 110-125 volt AC supply.
- All wiring, switches, power cords and metal parts carrying current in an AC circuit must be properly selected for load requirements and soldered or fixed under approved connectors with insulated connecting wires. No exposed wires, switches, joints, or un-insulated fasteners will be permitted.
- The power supply cord for the electrical apparatus must terminate in a three-prong grounded outlet. All power supplies and electrical equipment must be grounded.
- Bare wire and exposed knife-type switches are permitted on 12-volt DC circuits or less. Approved standard enclosed switches are required for all other electrical installations.
- Wet-cell batteries with open tops are not permitted. Closed-cell or dry-cell batteries are permissible.
- The operation of high-pressure vessels and pressurized systems is not permitted.
- There must be no open flame, torch or burner in the display area.
- All microwave and radio frequency sources must be designed and operated in compliance with state and federal regulations as well as applicable standards of the American National Standards Institute.
- Robotics projects should have interlocks or other controls.



## Massachusetts State Science & Engineering Fair

### TOPICS FOR CONSIDERATION IN JUDGING

The judging process will focus on what the student has learned about his or her chosen project and the process used in completing the project. In addition, the project will be judged on the basis of the student's ability to discuss intelligently the overall scope and significant results of his or her work. Judging criteria for team and individual projects are identical.

#### 1. Scientific or Engineering Approach - Possible 25 points

- A. Did the student start with a clearly stated hypothesis or statement of an engineering goal?
- B. Was the student orderly and logical with the setup and follow through of the project?
- C. Were the student's conclusions consistent with the data he or she collected?

#### 2. Knowledge of Project Area - Possible 20 points

- A. How effectively did the student conduct preliminary research?
- B. What was the extent of the student's knowledge of material related to project?
- C. Was the student aware of both the scope and limitations of the project?

#### 3. Thoroughness - Possible 20 points

- A. Did the student do sufficient research in the literature before starting the project?
- B. Was thorough use made of data and observations?
- C. Was the original plan successfully followed through to completion?

#### 4. Written Records and Reports - Possible 15 points

- A. Did the student keep an original handwritten, bound logbook with all plans, procedures, observations, and conclusions for failures as well as successes?
- B. Did the student put together an accurate written report, complete with a bibliography?

#### 5. Ingenuity and Creativity - Possible 15 points

- A. Was the explanation of the project clear and precise?
- B. How well did the student use his or her materials in the solution of problems?
- C. Did the student present any new unique ideas?

#### 6. Visual presentation - Possible 5 points

- A. Was the project displayed in a logical and organized manner?
- B. Did the display and posters effectively convey the message in an understandable manner?



## **TIMELINES**

### **Regional & State Middle School Science and Engineering Fairs**

### **Due Dates -- 2015 Forms**

#### **Due prior to start of experimentation**

The following Forms must be sent to either the student's Middle School Regional Safety Review Committee (see contact information in this Manual and on the MSSEF website – [the correct region](#) will be determined by the location of the student's school) or to the MSSEF Middle School State Safety Review Committee:

- Research Plan Forms 1A and 1B
- If necessary, human Informed Consent Form (Form C) that will be given to subjects before experimentation, and
- Designated Supervisor Form (Form D)
- Student must retain a copy of any/all forms.

#### **Due prior to MSSEF Middle School Science & Engineering Fair**

##### **Deadline: May 8, 2015 or before**

- Registration Form (Approved Research Plan, Forms 1A and B included), and
- Approved Forms C and D, if necessary

Student must retain a copy of these forms.

##### **Mail to:**

Regional Science Resource Center  
UMASS Medical School  
222 Maple Avenue  
Shrewsbury, MA 01545

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For more information about entering the  
Massachusetts Middle School Science and Engineering Fair:  
Contact: Karin Lebeau at 508 856-1529, or [karin.lebeau@umassmed.edu](mailto:karin.lebeau@umassmed.edu)



Massachusetts State Science & Engineering Fair

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Massachusetts State Science & Engineering Fair

2014-2015

**MSSEF SCIENCE & ENGINEERING FAIR  
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Co-Chair, HS Fair

Carol Barry  
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Rachel Usher  
Douglas Public School



### **MSSEF Statewide Headquarters**

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Email: [info@scifair.com](mailto:info@scifair.com)  
Website [www.scifair.com](http://www.scifair.com)

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### **MSSEF Middle School Science & Engineering Fair Site Office**

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c/o Regional Science Resource Center  
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Shrewsbury, MA 01545  
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[karin.lebeau@umassmed.edu](mailto:karin.lebeau@umassmed.edu), and/ or  
[sandy.mayrand@gmail.com](mailto:sandy.mayrand@gmail.com)

MSSEF, Inc. is incorporated in Massachusetts as a not-for-profit corporation and is a Federal tax-exempt organization. Tax ID # 042707499





## MSSEF Middle School Division Regional Fair District Information

Middle school teachers should contact their respective regional chairs for further information about the regional middle school Science Fairs.

### **Region I: Western Massachusetts**

Western Massachusetts Middle School  
Science & Engineering Fair  
Massachusetts College of Liberal Arts (MCLA)  
May 2, 2015

#### **Director: Dr. Chris Himes**

MCLA  
375 Church Street  
North Adams, MA 01247  
Tel: (413) 662-5222  
Email: [c.himes@mcla.edu](mailto:c.himes@mcla.edu)  
Website: [www.mcla.edu/About\\_MCLA/Community/stempipeline/regionimiddleschoolscifair](http://www.mcla.edu/About_MCLA/Community/stempipeline/regionimiddleschoolscifair)

### **Region II: Central Massachusetts**

Worcester Regional Middle School Science &  
Engineering Fair  
Worcester Polytechnic Institute  
Monday, May 4, 2015

#### **Director: Lisa Greenwald**

379 Cross Street  
Boylston, MA 01505  
Tel: (508) 869-0194  
Email: [greenwal@westborough.k12.ma.us](mailto:greenwal@westborough.k12.ma.us)  
Website: [www.wrsef.org](http://www.wrsef.org)

### **Region III: Southwest Massachusetts**

Rensselaer @ BCC Region III Science Fair  
Bristol Community College, Fall River  
Combined Senior High/Middle School Fair  
2015 Date TBD

#### **Director: Dr. James Pelletier**

Bristol Community College  
777 Elsbree Street  
Fall River, MA 02720  
Tel: (508) 678-2811, x2200  
Fax: (508) 675-2366  
Email: Colleen Vickery: [info@massregion3.org](mailto:info@massregion3.org)  
Website: [massregion3.org](http://massregion3.org)

### **Region IV: Northeastern Massachusetts**

Northeast Regional Middle School Science &  
Engineering Fair  
University Massachusetts Lowell - Ball Hall  
2015 Date - TBD

#### **Director: Dr. Carol Barry**

UMass Lowell – Dept. of Plastic Engineering  
Ball Hall 110, 185 Riverside Street,  
Lowell MA 01854  
Tel: (978) 934-3436  
Email: [Carol.Barry@uml.edu](mailto:Carol.Barry@uml.edu)

### **Region V: Southeastern Massachusetts**

Southeastern Massachusetts Middle School Science &  
Engineering Fair  
Regis College  
April 25, 2015

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### **Region VI: Boston**

Boston Public Schools Regional Science Fair  
Northeastern University, Boston  
Combined Senior High/Middle School Fair  
2015 Date TBD

#### **Director: Pam Pelletier**

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Note: Region VI includes all public schools within the City of Boston. Private and parochial schools within the City of Boston are included in Region V

## MSSEF Regional Districts' Cities and Towns

Region I: Western Massachusetts

Adams	Hinsdale	Shutesbury
Agawam Holyoke		South Hadley
Alford	Huntington	Southampton
Amherst	Lanesborough	Southwick
Ashfield	Lee	Springfield
Becket	Lenox	Stockbridge
Belchertown	Leverett	Sunderland
Bernardston	Leyden	Toland
Blandford	Longmeadow	Tyringham
Buckland	Ludlow	Ware
Charlemont	Middlefield	Warwick
Cheshire	Monroe	Washington
Chester	Monson	Wendell
Chesterfield	Montague	Westfield
Chicopee	Monterey	Westhampton
Clarksburg	Montgomery	West Springfield
Colrain	Mt. Washington	West Stockbridge
Conway	New Ashford	Whately
Cummngton	New Marlboro	Wilbraham
Dalton	New Salem	Williamsburg
Deerfield	North Adams	Williamstown
Easthampton	Northfield	Windsor
East Longmeadow	Northampton	Worthington
Egremont	Orange	
Erving	Otis	<b>Regional High Schools</b>
Florida	Palmer	Amherst
Gill	Pelham	Frontier
Goshen	Peru	Gateway
Granby	Petersham	Hampshire
Granvfile	Pittsfield	Hoosac Valley
Great Barrington	Plainfield	Mount Everett
Greenfield	Richmond	Pathfinder Reg. Voc.
Hadley	Rowe	Taconic
Hampden	Russell	Wahconah
Hancock	Savoy	Ralph C. Mahar
Hatfield	Sandisfield	Minnechaug
Hawley	Sheffield	Mohawk Trail
Heath	Shelburne	Monument Mountain
		Mount Greylock
		Pioneer Valley
		Turners Falls

**Region II: Central Massachusetts**

Ashburnham	Lancaster	Templeton
Ashland	Leicester	Upton
Athol	Leominster	Uxbridge
Auburn	Lunenburg	Wales
Barre	Marlborough	Warren
Berlin	Maynard	Webster
Blackstone	Mendon	Westborough
Bolton	Millford	West Boylston
Boylston	Millbury	West Brookfield
Brimfield	Millville	Westminster
Brookfield	New Braintree	Whitinsville
Charlton	Northborough	Winchendon
Clinton	Northbridge	Worcester
Douglas	North Brookfield	
Dudley	Oakham	<b>Regional High Schools</b>
East Brookfield	Oxford	Algonquin
Fitchburg	Paxton	Assabet Valley
Framingham	Phillipston	Bay Path
Gardner	Princeton	Blackstone-Millville
Grafton	Royalston	Lincoln-Sudbury
Hardwick	Rutland	Montachusett
Harvard	Shrewsbury	Narragansett
Holden	Southborough	Nashoba
Holland	Southbridge	Nipmuc
Holliston	Spencer	Oakmont
Hopedale	Sterling	Quabbin
Hopkinton	Stow	Quaboag
Hubbardston	Sturbridge	Shepherd Hill
Hudson	Sudbury	South Middlesex
	Sutton	Tahanto
		Tantasqua
		Wachusett

**Region III: Southwestern Massachusetts**

Acushnet	Mansfield	Swansea
Attleboro	New Bedford	Taunton
Berkeley	Norfolk	Westport
Dartmouth	North Attleboro	Wrentham
Dighton	Norton	
Fairhaven	Plainville	<b>Regional High Schools</b>
Fall River	Raynham	Apponequet
Foxborough	Rehoboth	Bristol-Plymouth
Franklin	Seekonk	Dighton-Rehoboth
Lakeville	Somerset	Diman Regional
		King Philip

## Region IV: Northeastern Massachusetts

Acton	Lawrence	Tewksbury
Amesbury	Lexington	Topsfield
Andover	Lincoln	Townsend
Arlington	Littleton	Tyngsboro
Ashby	Lowell	Wakefield
Ayer	Lynn	Waltham
Bedford	Lynnfield	Watertown
Belmont	Malden	Wenham
Beverly	Manchester	Westford
Billerica	Marblehead	West Newbury
Boxborough	Medford	Wilmington
Boxford	Melrose	Winchester
Burlington	Merrimac	Winthrop
Cambridge	Methuen	Woburn
Carlisle	Middleton	
Chelmsford	Nahant	<b>Regional High Schools</b>
Chelsea	Newbury	Acton-Boxborough
Concord	Newburyport	Concord-Carlisle
Danvers	North Andover	Greater Lawrence
Dracut	North Reading	Greater Lowell
Dunstable	Peabody	Groton-Dunstable
Essex	Pepperell	Hamilton-Wenham
Everett	Reading	Masconomet
Georgetown	Revere	Metropolitan
Gloucester	Rockport	Nashoba Valley Tech
Groton	Rowley	Northeast
Groveland	Salem	North Middlesex
Hamilton	Salisbury	Pentucket
Haverhill	Saugus	Shawsheen Valley
Ipswich	Shirley	Triton
	Somerville	Whittier Regional
	Stoneham	
	Swampscott	

## Region V: Southeastern Massachusetts

Abington	Lakeville	Truro
Avon	Marion	Walpole
Barnstable	Marshfield	Wareham
Bellingham	Martha's Vineyard	Wayland
Bourne	Mashpee	Wellesley
Braintree	Mattapoisett	Wellfleet
Brewster	Medfield	West Bridgewater
Bridgewater	Medway	Weston
Brockton	Middleborough	Westwood
Brookline	Millis	Weymouth
Canton	Milton	Whitman
Carver	Nantucket	Yarmouth
Chatham	Natick	
Cohasset	Needham	<b>Regional High Schools</b>
Dedham	Newton	Apponequet
Dennis	Norwell	Blue Hills
Dover	Norwood	Bridgewater-Raynham
Duxbury	Orleans	Cape Cod Regional
East Bridgewater	Pembroke	Dennis-Yarmouth
Eastham	Plymouth	Dover-Sherborn
Easton	Plympton	Martha's Vineyard
Falmouth	Provincetown	Nauset
Freetown	Quincy	Old Colony Regional
Halifax	Randolph	Old Rochester
Hanover	Raynham	Silver Lake
Hanson	Rochester	Southeastern Regional
Harwich	Rockland	Upper Cape Cod Regional
Hingham	Sandwich	Whitman-Hanson
Holbrook	Scituate	
Hull	Sharon	<b>All Boston parochial</b>
Hyannis	Sherborn	<b>and private schools.</b>
	Stoughton	

## Region VI Boston

Boston Public Schools Regional Science Fair

Includes all public schools within the City of Boston. Private and parochial schools within the City of Boston are included in Region V.

***Special Note: These six regions are the same for both the Middle School and High School Divisions.***