

2012 NATIONAL SCIENCE OLYMPIAD – NATIONAL SCIENCE STANDARDS ALIGNMENT

B (MIDDLE SCHOOL) DIVISION

B EVENTS	NATIONAL STANDARD
Anatomy – Students will be tested on their knowledge of anatomy and health concepts of the respiratory and digestive systems.	M.C.1 – Structure and function in living systems M.F.1 – Personal health
Awesome Aquifers – Students will construct an aquifer and answer questions about groundwater concepts - includes a presentation.	M.D.1 – Structure of the Earth system M.U.2 – Evidence, models, and explanation
Bottle Rockets – Prior to the tournament, Students construct up to 2 rockets designed to stay aloft for the greatest amount of time.	M.E.1 – Abilities of technological design
Compute This – Students will be presented with a problem which requires quantitative data capture from the Internet and the presentation of data in a graphical format.	M.A.1 – Abilities necessary to do scientific inquiry
Crime Busters – Students will identify the perpetrators of a crime or crimes by using paper chromatography and analysis of unknown solids, liquids, and plastics found at the scene of a crime.	M.A.1 – Abilities necessary to do scientific inquiry M.B.1 – Properties and changes of properties in matter
Disease Detectives – This event requires students to apply principles of epidemiology to a real-life health situation or problem with a focus on food borne illness.	H.F.1 - Personal and community health H.G.1 - Science as a human endeavor
Dynamic Planet – Students will use process skills to complete tasks related to Earth’s fresh waters.	M.D.1 – Structure of the Earth system
Experimental Design – Given a set of objects, Students will design, conduct, analyze, and write up an experiment.	M.A.1 – Abilities necessary to do scientific inquiry
Food Science – Students will use their understanding of the chemistry of baking ingredients to answer questions at a series of stations.	M.B.1 – Properties and changes of properties in matter
Forestry – This event will test knowledge of North American trees on the official list.	H.C.3 – Biological evolution
Keep the Heat – Students will construct a device to retain heat.	M.E.1 – Abilities of technological design
Meteorology – Students will demonstrate a multidisciplinary understanding of climate on Earth.	M.D.1 – Structure of the Earth system H.D.1 – Energy in the Earth system H.D.3 – Origin and evolution of the Earth system
Microbe Mission – Students will answer questions, solve problems, and analyze data pertaining to microbes.	H.C.1 – The cell
Mission Possible – Students will design, build, and test one Rube Goldberg-like device” that completes a required Final Task.	M.E.1 – Abilities of technological design
Mousetrap Vehicle – Students will construct a vehicle that uses one mousetrap as its sole means of propulsion to reach a target as close as possible to their predicted time.	M.E.1 – Abilities of technological design
Optics – Students compete in activities and answer questions related to geometric and physical optics.	M.B.3 – Transfer of Energy H.B.6 – Interactions of energy and matter
Road Scholar – Students will interpret various map features using a variety of road and topographic maps.	M.U.2 – Evidence, models, and explanation
Rocks and Minerals – Students will identify, describe, and classify various specimens.	M.D.1 – Structure of the Earth system
Reach for the Stars – Students will demonstrate knowledge of properties and evolution of stars, open and globular clusters, and star forming galaxies.	H.D.4 – Origin and evolution of the universe
Storm the Castle – Prior to the tournament, Students design, construct and calibrate a device that uses only the energy of a falling counterweight to launch a projectile as far and as accurately as possible.	M.E.1 – Abilities of technological design
Towers – Students will design and build the most efficient tower.	M.E.1 – Abilities of technological design
Water Quality – Students will evaluate aquatic environments.	M.A.1 – Abilities necessary to do scientific inquiry
Write It/Do It – A technical writing exercise where students write a description of a contraption and other students will attempt to recreate it using only the written description.	M.E.1 – Abilities of technological design