

## **EVENT: Disease Detectives- Extravaganza December 16, 2009**

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Additional information can be found at: [www.macombso.org](http://www.macombso.org)

### **Competition Information:**

Middle School (Division B) Science Olympiad  
February 27, 2010  
Macomb Community College, South Campus

### **Competition Day:**

1. Be prompt. We will begin the competition at the designated time. We will not wait on any team that is not present at the beginning of the exam.
2. Two #2 pencils should be brought to the competition room by each team. We will supply the scantron answer sheets to students. Students will be allowed to write on the exam. Students should be familiar with the scantron format.
3. Students can bring non-programmable calculators to the competition.
4. **Each team may bring one 8.5"X11" two-sided page of notes that contains information in any form from any source.**
5. No cell phones or other electronic devices are allowed in the competition classroom.
6. Please have students use the restroom before they enter the competition classroom.
7. Parents and coaches are not allowed in the competition room. They should remain quietly in the hallway outside the classroom.
8. Students should be prepared to remain in the exam room for the entire testing period. **The approximate time for the event is 50 minutes.**

## **2010 Study Guide for Disease Detectives Division B**

### **Emphasis - Public Health Concerns Related to Population Growth**

Water Quality, Water Pollution, Water Demands  
Sanitation Needs  
Growth of Slums  
Household Environment  
Environmental Degradation  
Air Pollution  
Infectious Disease Outbreaks  
Rapid Spread of Disease via Public Transportation and Air Travel  
Food Quality and Food Contamination  
Food Shortages  
Availability of Health Care

### **Types of Knowledge**

1. Categories of disease causing agents
2. Modes of disease spread
3. Definitions of basic epidemiologic terms
4. Triads of analysis (e.g. person/place/time and agent/host/environment)
5. The basis for taking action to control and prevent the spread of disease
6. 10 steps in outbreak investigation
7. Treatment and therapies

### **Vocabulary**

Outbreak	Cluster	Prognosis
Epidemic	Pathogenicity	Bias
Pandemic	Virulence	Carrier
Surveillance	Host	Antibody
Risk	Airborne	Direct Transmission
Vector	Case-control Study	Exposure
Immunity	Cohort	Frequency Distribution

Prevalence	Cross-sectional Study	Latency Period
Endemic	Relative Risk	Mortality Rate
Histogram	Incidence	Morbidity
Odds ratio	Survival Curve	Vehicle
Zoonosis	Fomite	Random Sample
Point Prevalence	Case-fatality Rate	Reservoir
Mean	Median	Mode
Period Prevalence		
Years of Potential Life Lost (YPLL)		
Public Health Surveillance		
EPA		
CDC		

### General Causative Agents

Viruses  
 Bacteria  
 Protists  
 Fungi  
 Animals  
 Toxins  
 Prions  
 Mutagens

### Specific Causative Agents

West Nile Virus	<i>Yersinia pestis</i>
Avian Flu Virus	Simian Immunodeficiency Virus
Cyanide	Human Immunodeficiency Virus
Ebola virus	Mustard Gas
Carbon monoxide	Dirty Bomb
Arsenic	Polonium-210 (Po-210)
Nicotine	Sarin
Tear gas	Ethylene glycol
<i>E. coli</i> O157:H7	DES (diethylstilbestrol)
Cigarette smoke	PCB (polychlorinated biphenyls)
Radon	Rotaviruses
Human Papillomavirus	Abestos
<i>Salmonella</i> I 4,[5],12:i:- (pronounced "four five twelve eye minus")	
Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)	

## Diseases/Illnesses

Legionnaire's Disease	Salmonellosis
Botulism	Mumps
Mad Cow Disease	Yellow Fever
SARS	Cholera
Typhoid Fever	Malaria
Small Pox	Lung Cancer
Asthma	Dermatitis
Emphysema	Goiter
Lead poisoning	Mercury Poisoning
Osteoporosis	Pneumoconiosis
Queensland Fever	Melanoma
Uranium poisoning	Multiple Sclerosis
Zinc poisoning	Lyme Disease
Listeriosis	Giardiasis
Shingles	African Sleeping Sickness
Meningitis	Breast Cancer
Prostate Cancer	Cervical Cancer
Trichomoniasis	Chlamydia
Epilepsy	Rabies
Tapeworm Infection	Ringworm
Hookworm	Tuberculosis (TB)
Autism	Hantavirus Pulmonary Syndrome
Avian Influenza	Hepatitis A
Hepatitis B	Pernicious Anemia
Iron Deficiency Anemia	Attention Deficit/Hyperactivity Disorder
Acquired Immunodeficiency Syndrome (AIDS)	
H1N1 (Swine Flu)	

Additional resources can be obtained by visiting the following websites:

[http://soinc.org/disease\\_detectives\\_b](http://soinc.org/disease_detectives_b)

[http://soinc.org/disease\\_detectives\\_c](http://soinc.org/disease_detectives_c)

<http://www.cdc.gov>