

# Honors Mathematics Observation Inventory

## Observation Inventory Descriptors

### **Perceptive in interpreting both verbal and nonverbal cues**

The student can sift through all information to highlight important information from verbal descriptions, written descriptions, graphs, diagrams, and figures. An example would be that given a problem solving situation, the student easily finds the essential details and applies them to solve the problem.

### **Has accelerated task commitment when learning**

Ability to concentrate and work independently for long periods of time. They exceed the amount of time adults typically expect students to remain actively engaged.

### **Has accelerated energy when learning**

Energetic; enthusiastic about new ideas or challenges and is persistent in solving problems. They accept challenge and show enthusiasm to see a problem through to completion. The student has an intense drive for meaning.

### **Ability to think abstractly and conceptualize**

The student can analyze a situation and represent it symbolically. The student can make mental connections between given mathematical information and their expressed representations. Ability to think logically and symbolically about quantitative and spatial relationships.

### **Ability to grasp underlying principles and make generalizations**

The student is able to inductively reason and apply that reasoning to a situation. Example, the student can take a given algorithm and apply it to a novel situation or create a new algorithm.

### **Ability to elaborate; can articulate a thorough and detailed response**

The student is able to use mathematical language and reasoning to clearly communicate in verbal and written formats. For example, the student consistently scores at a high level on the District 203 “Explanation” component of the extended response continuum.

### **Inquisitive attitude; seeks information for its own sake**

These students ask unusual, “intellectual” questions. They may ask about something that makes an unexpected connection.

### **Uses and applies a variety of strategies**

The student has a toolbox of strategies from which to draw. The student can see multiple pathways to solve problems. For example, the student consistently scores at a high level on the District 203 “Strategic Knowledge” component of the extended response continuum.

### **Risk Taker**

When the student is confronted with a problem that has no clear solution or procedure, they are willing to work toward a solution and share their ideas with others.

### **Large base of mathematical knowledge and recall ability**

The student has learned a large body of mathematical knowledge (formulas, symbols, and relationships) and is able to recall it in appropriate situations. For example, the student consistently scores at a high level on the District 203 “Mathematical Knowledge” component of the extended response continuum.

### **Intuitive; able to recognize and apply patterns**

Shows insight into novel situations. The student sees cause and effect relationships.

### **Ability to reason**

The student is able to judge and defend their ideas using inductive and/or deductive reasoning. The student is able to explain what they did, why they did it, and how they know it is correct.