



# **SCIENCE CURRICULUM REVIEW TEAM**

**Milton Public Schools  
School Committee Presentation  
March 30, 2010**

# SCIENCE CURRICULUM REVIEW TEAM 2010

- Barbara Plonski , Co-Chair

*MHS Science Department Head / Elementary Science Coordinator*

- Dr. Karen Spaulding , Co-Chair

*PMS Assistant Principal / 6-8 Math & Science Coordinator*



# SCIENCE CURRICULUM REVIEW TEAM 2010 (CONT'D.)

- *Elementary Representatives:*
  - Jerry Schultz, *Principal, Collicot*
  - Kathryn Manz, *Grade 3 French, Tucker*
  - Tanya Walsh, *Grade 3, Collicot / Cunningham*
  - Amanda LeFort, *Grade 4, Cunningham*
  - Rina Chen, *Grade 5, Collicot*
  - Mary Bodkin: *Grade 5, Glover*
- *Pierce Middle School Representatives:*
  - Jill Markarian, *Grade 8 Science*
  - Jennifer Gilbert, *Grade 8 Science*
- *Milton High School Representatives:*
  - Tom Shaw, *Physics*
  - Kara Gallagher, *Biology & Chemistry*
  - Loyola Pasiewicz, *Chemistry*

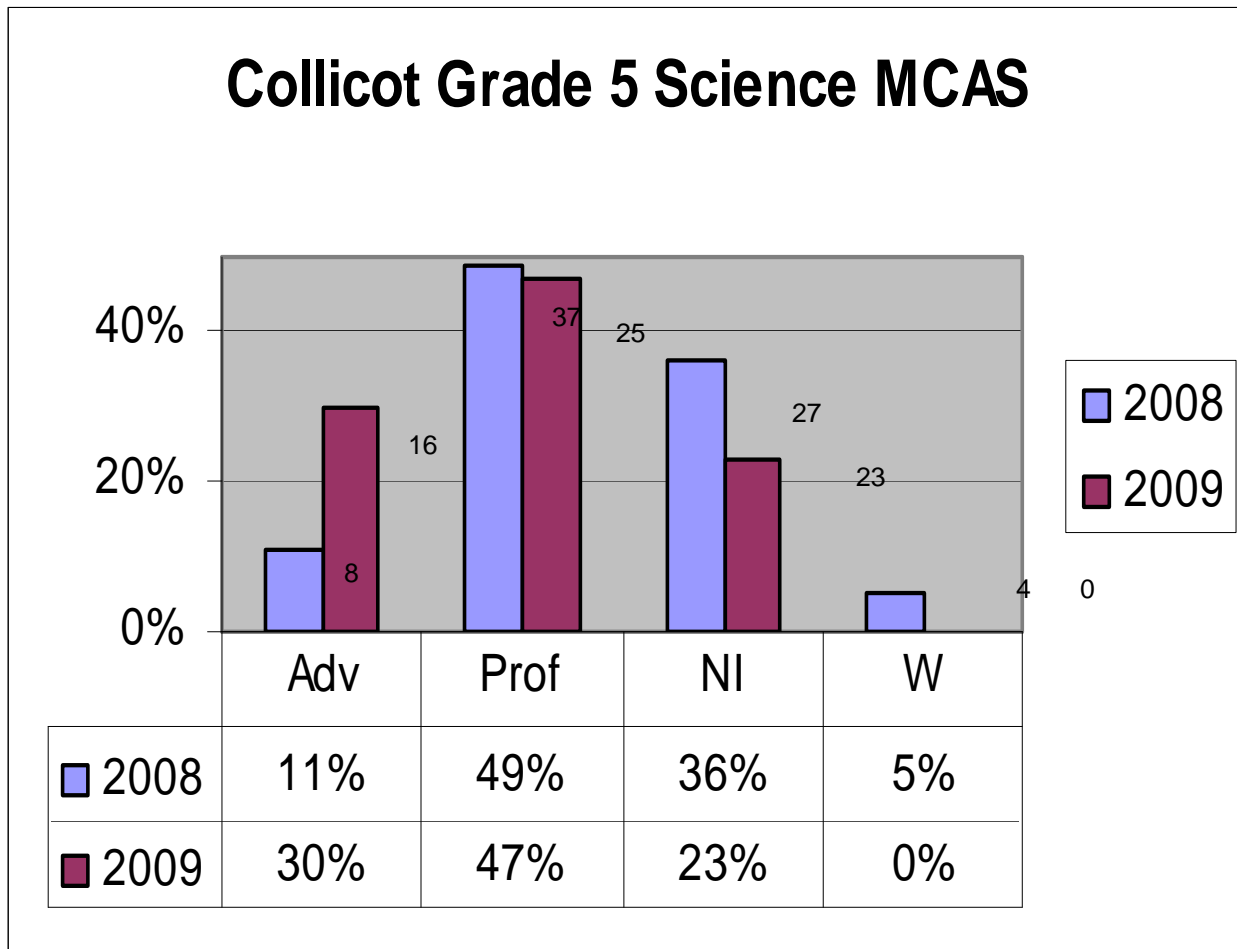


# REVIEW TEAM WORK PLAN

- January 2010
  - Conducted data needs assessment
    - What data are available?
    - What data are needed?
- February 2010
  - Responded to needs assessment
    - Teacher survey development
    - Assembled achievement data sources
- March 2010
  - Analyzed MCAS Data
    - 3 year trends
    - Strength and weaknesses
- April 2010
  - Launch teacher survey
    - Middle school & high school via curriculum/department meetings
    - Elementary schools via principal meetings
- May 2010
  - Classroom observations K-12
  - Survey results analysis
  - Curriculum document analysis
- June 2010
  - Final data assembly
  - Recommendations
  - Presentation preparation



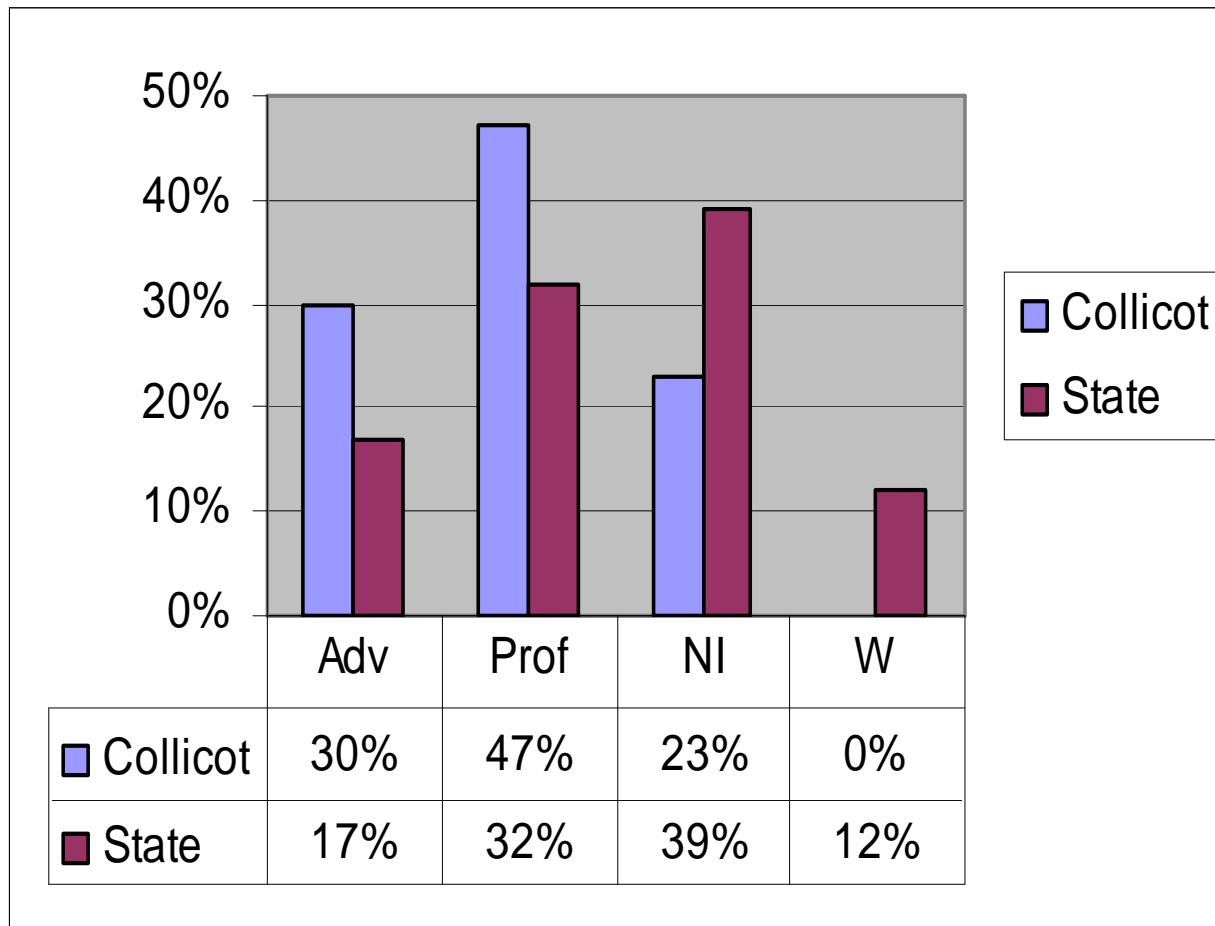
# Comparison of Science MCAS Results: 2008 and 2009



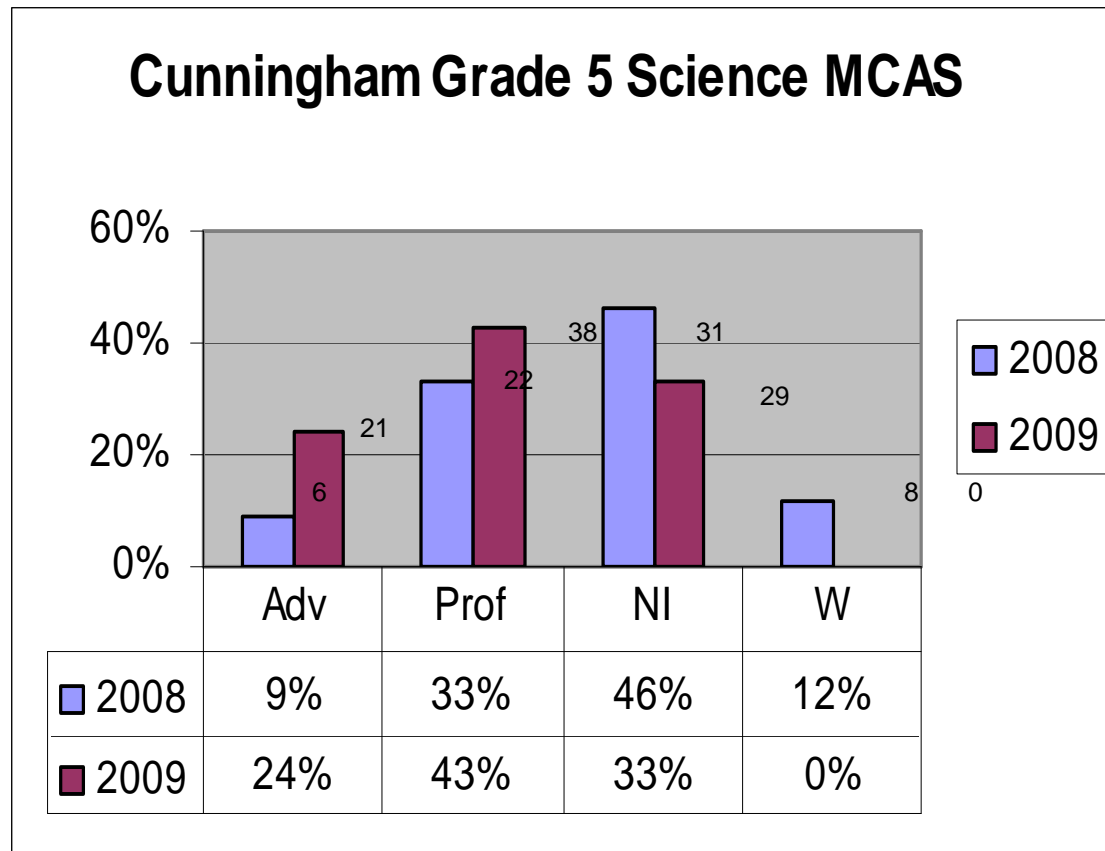
Numbers on graph = Number of students achieving performance level



# Comparison of Science MCAS: Collicot and State 2009



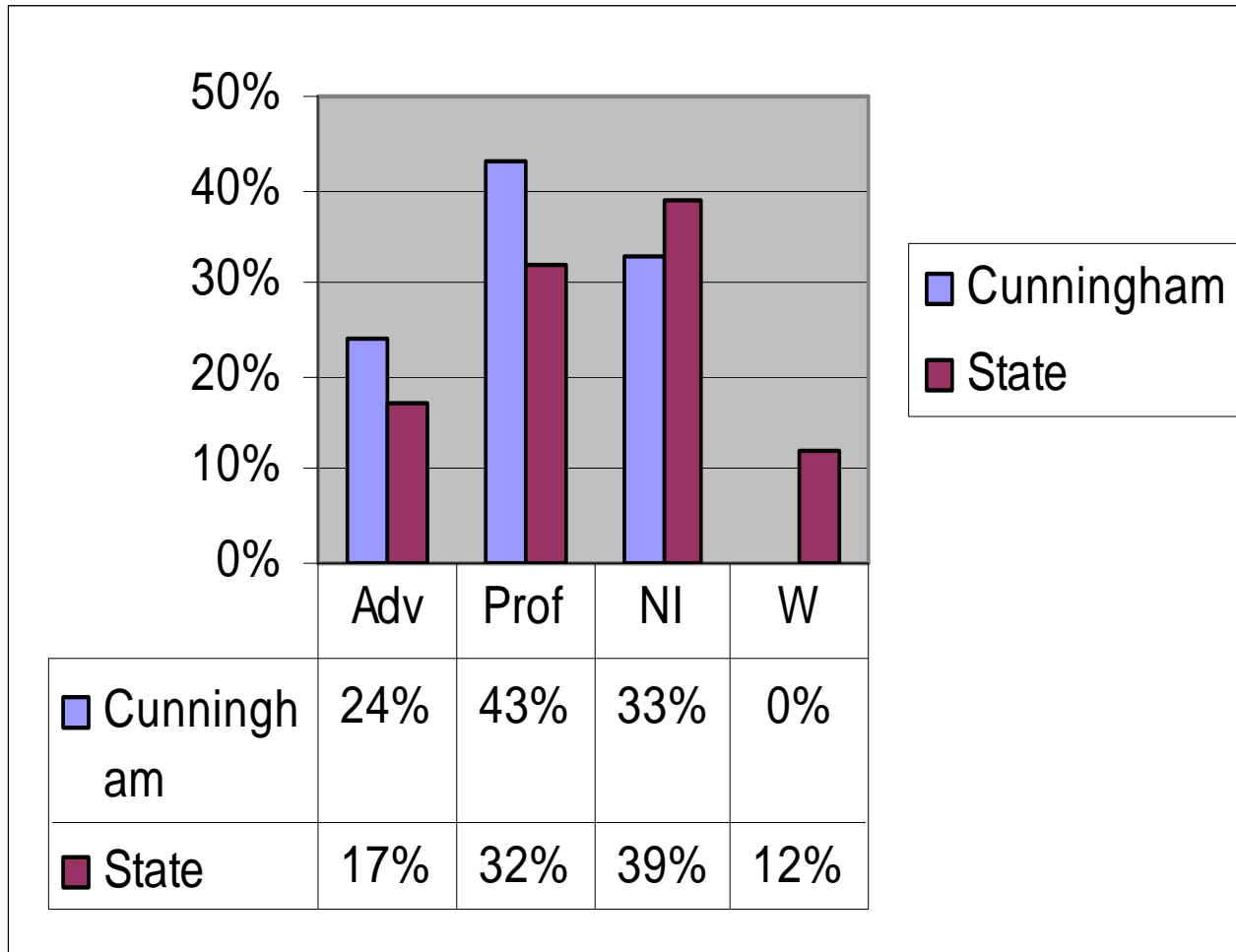
# Comparison of Science MCAS Results: 2008 and 2009



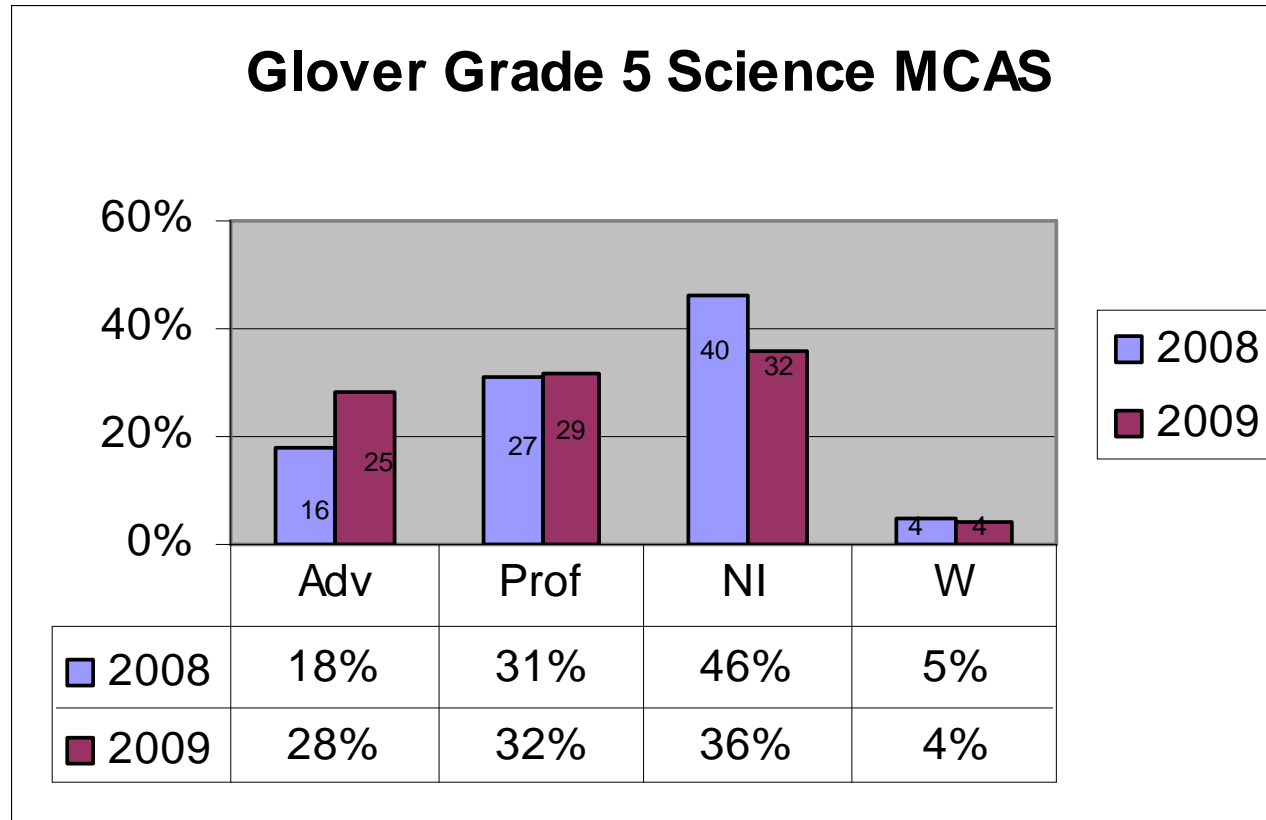
Numbers on graph = Number of students achieving performance level



# Comparison of Science MCAS: Cunningham and State 2009



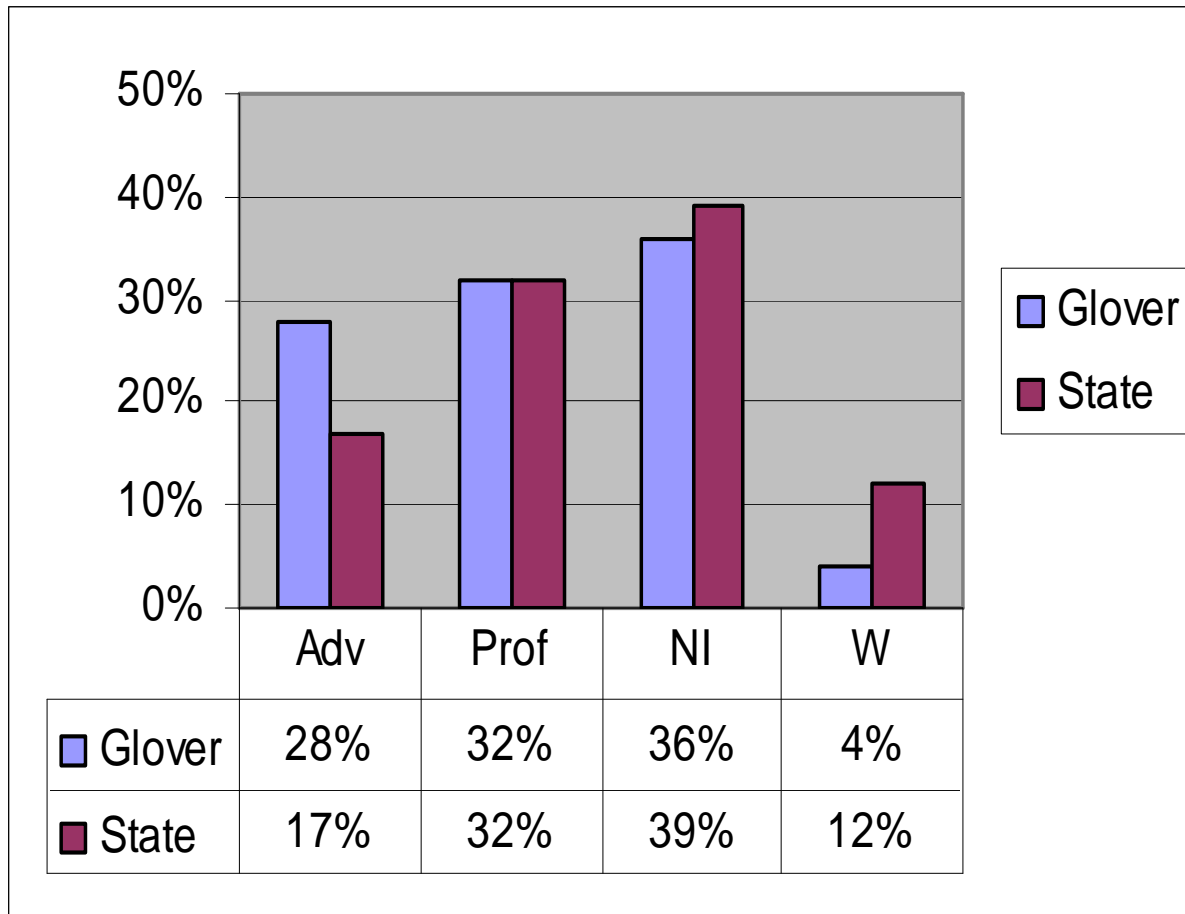
# Comparison of Science MCAS Results: 2008 and 2009



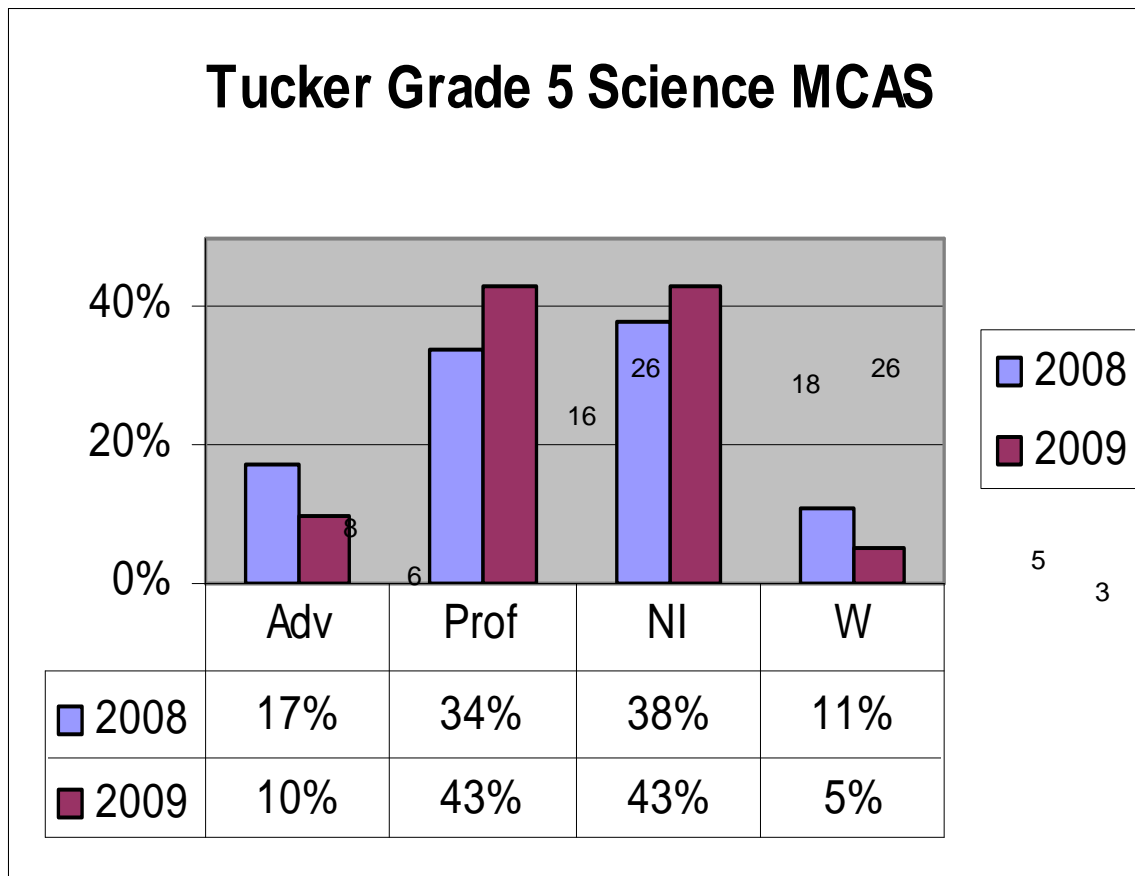
Numbers on graph = Number of students achieving performance level



# Comparison of Science MCAS: Glover and State 2009



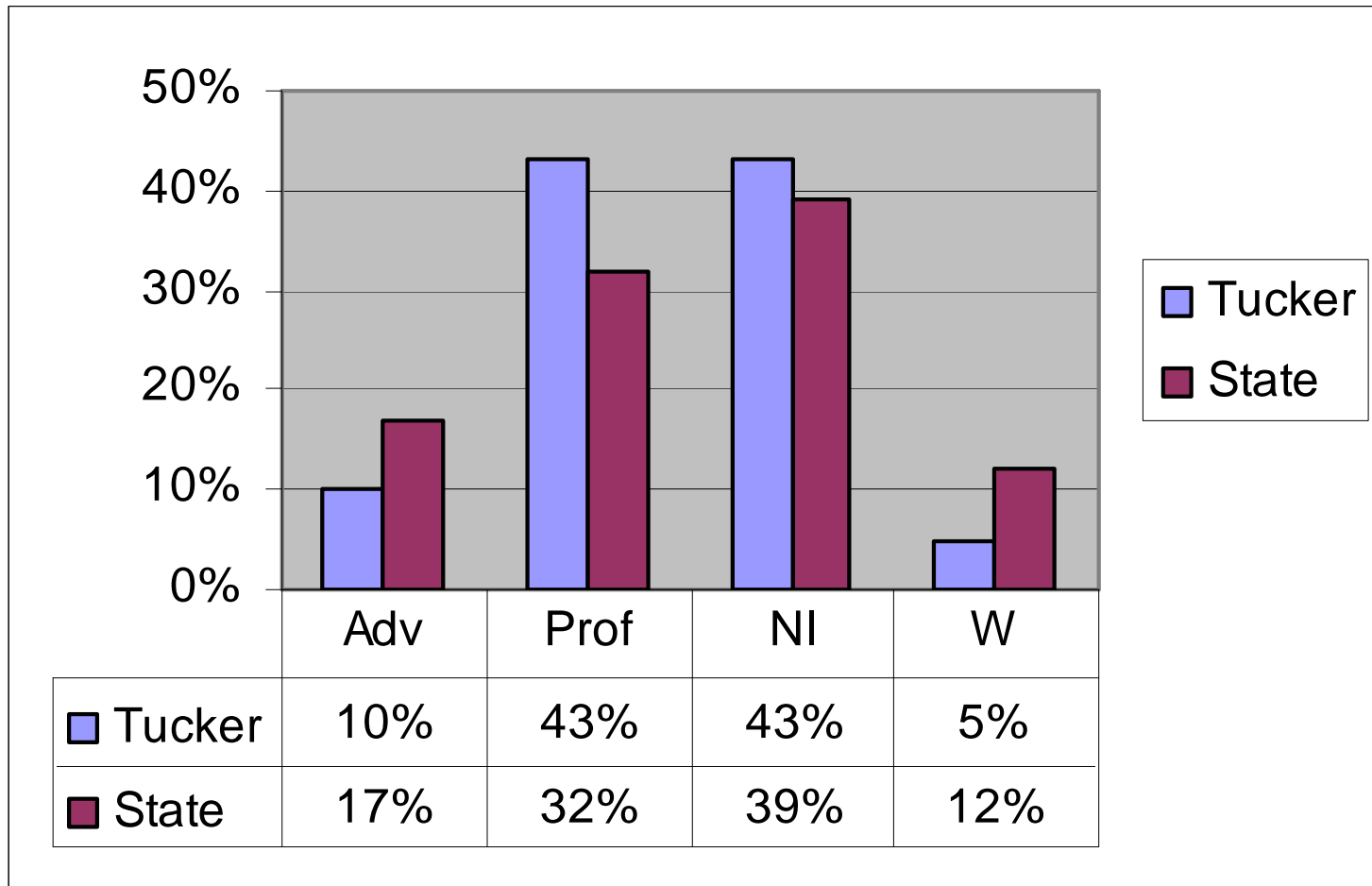
# Comparison of Science MCAS Results: 2008 and 2009



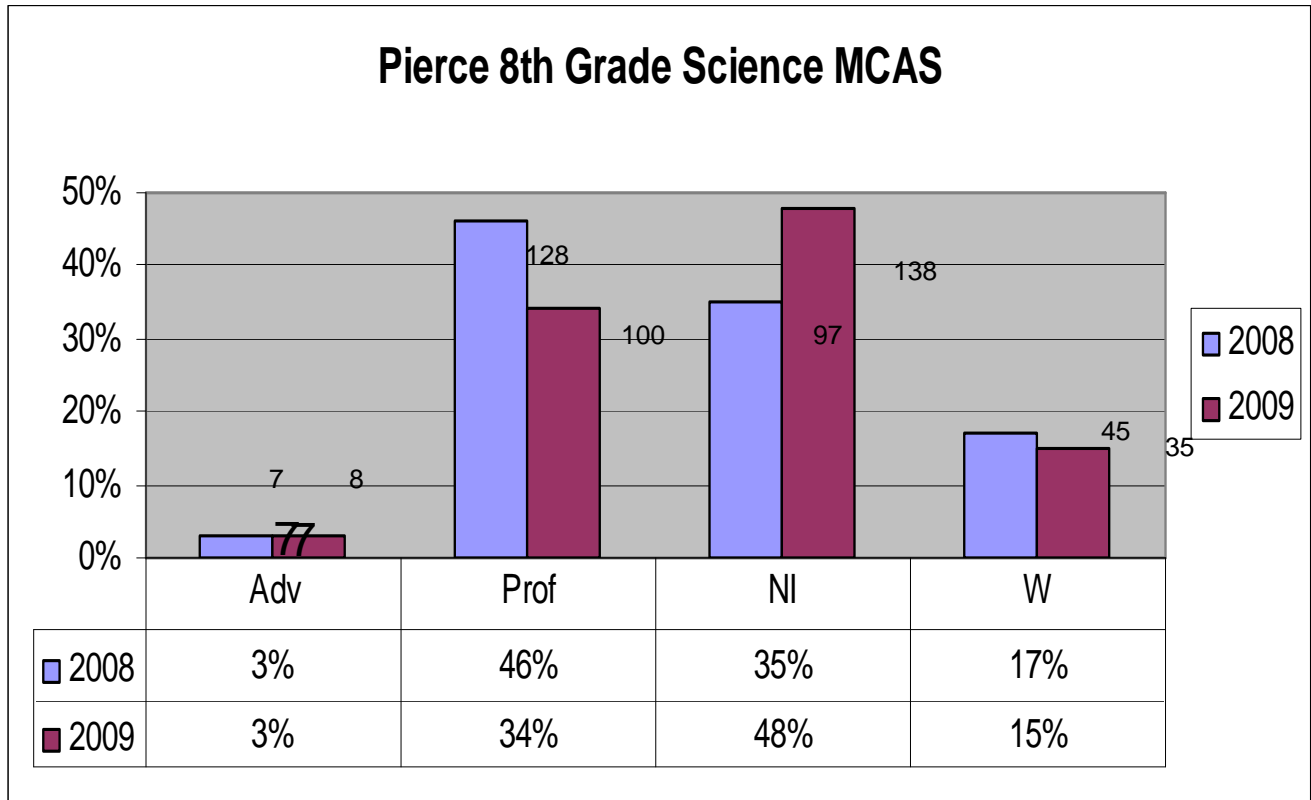
Numbers on graph = Number of students achieving performance level



# Comparison of Science MCAS: Tucker and State 2009



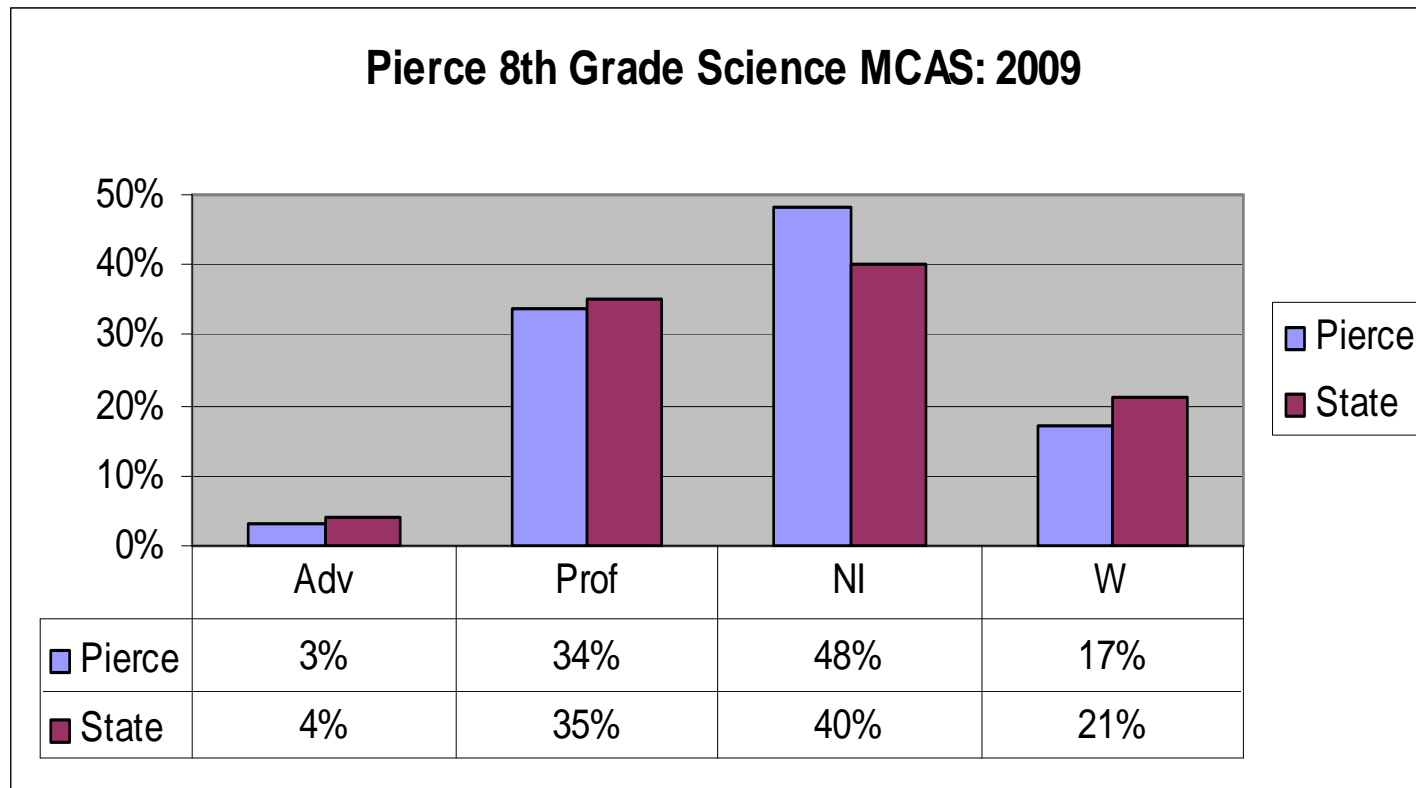
Comparison of PMS STE MCAS Performance:  
2008 and 2009



Numbers on graph = number of students achieving that performance level



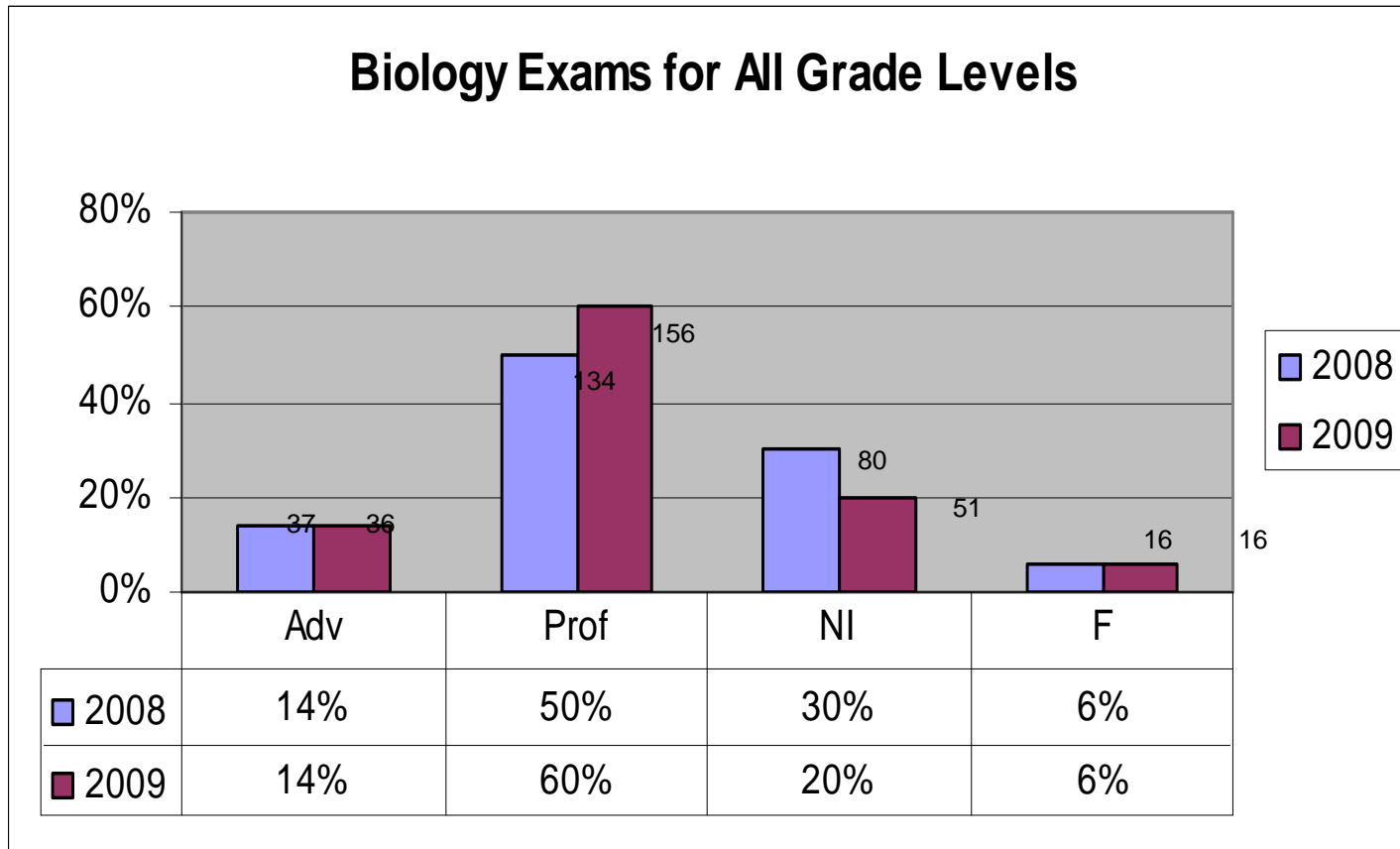
# Comparison: PMS and State



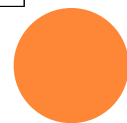
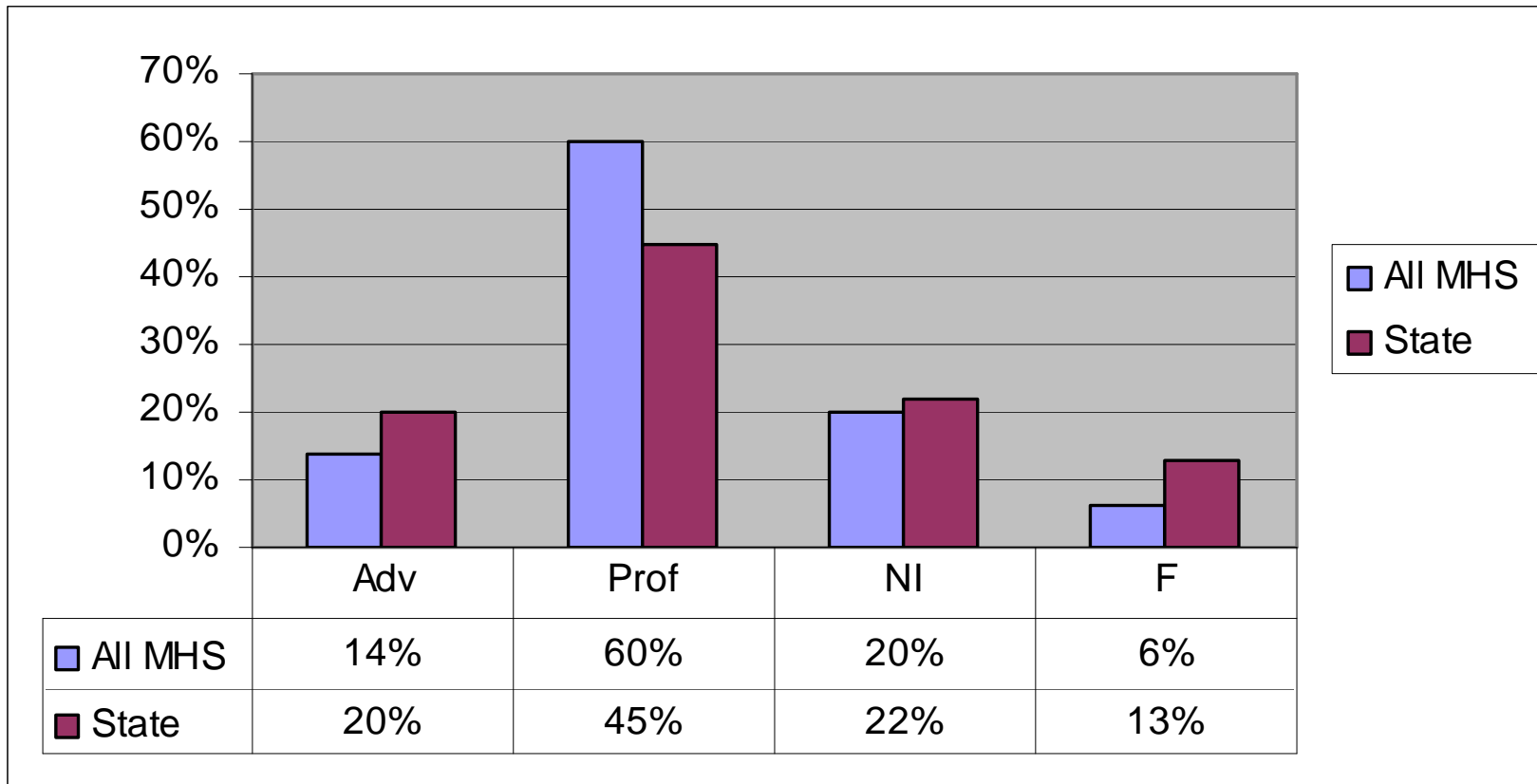
2008: Grades 9 and 10

2009: Grades 9,10 and 11

Results for All Grades That Took the Biology MCAS



Comparison of all of the MHS students (Grades 9,10 and 11) who took the Biology MCAS and the State Average for Grade 9 2009



# SCIENCE, TECHNOLOGY, AND ENGINEERING MCAS ANALYSIS: PRELIMINARY RESULTS

*Overall performance at all three levels has shown varying degrees of improvement.*

- Elementary Strengths:
  - Adaptations, ecosystems, light energy; open response in some areas
- Middle School Strengths:
  - Earth and space science
- High School:
  - Scores have shown marked improvement each year.
  - Milton students score better than state in all areas.



# PRELIMINARY RESULTS: AREAS IN NEED OF IMPROVEMENT

- Achievement gap exists
  - Special Education
  - Race/Ethnicity
  - Low Income
- Areas of Relative Weakness
  - Elementary
    - Earth science, engineering
  - Middle School
    - Biodiversity, evolution, engineering



# QUESTIONS TO EXPLORE: *ELEMENTARY*

## Written material

- *Are formal science texts or smaller, topic specific books a better choice?*

## Science materials support

- *What structure is necessary at the elementary level for science materials support?*

## Professional development

- *Is there sufficient science related PD available to elementary teachers?*

## Time-on-learning

- *Are all teachers teaching the designated minutes of science instruction and is there sufficient time allotted for science instruction?*

## Curriculum maps-

- *What documents will best communicate science learning goals and experiences?*



# QUESTIONS TO EXPLORE: *PIERCE MIDDLE SCHOOL*

## Technology and engineering

- *What are ways to incorporate these topics into instruction?*

## Conceptual progression

- *Are topics being presented at the most appropriate grade levels?*

## Science materials support

- *What structure is necessary at the middle school level for science materials support?*

## Science inquiry

- *What opportunities do students have to “do” science?*



# QUESTIONS TO EXPLORE: *MILTON HIGH SCHOOL*

## Vertical articulation:

- *How do topics / ideas / concepts build from one grade to the next K-12?*
- *How can instruction best be tailored at the high school level, given the learning experiences students have in grades K-8?*

