

# Colorado's Growth Model

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# What is the Colorado Growth Model?

It is a statistical model to calculate each student's progress on state assessments

It is a tool for displaying student, school, and district level results to educators and the public

# What does it tell us?

It tells us:

- How individual students and groups of students progress from year to year toward state standards. Each student's progress is based on where that student begins the learning process compared to the progress of other students in the state with similar starting points.
- Student progress over time and among which students and where the greatest growth is happening—and where it is not.
- The schools that produce the highest sustained rates of growth in student progress. (Those schools may or may not be schools with the highest test scores every year.)

The model attempts to answer the following questions, such as those parents may have:

- Did my child make a year's worth of progress in a year?
- Is my child growing appropriately toward meeting state standards?
- Is my child growing as much in Math as Reading?
- Did my child grow as much this year as last year?
- Did my child grown as much as his/her peers?

# And those teachers may have....

- Did my students make a year's worth of progress in a year?
- Did my students grow appropriately toward meeting state standards?
- How close are my students to becoming Proficient?
- Are there students with unusually low growth who need special attention?

# And those administrators may have...

- Did the students in our district/school make a year's worth of progress in all content areas?
- Are our students growing appropriately toward meeting state standards?
- Does this school/program show as much growth as that one?
- Can I measure student growth even for students who do not change proficiency categories?
- Can I pool together results from different grades to draw summary conclusions?

# Colorado Dept. of Ed. Efforts to Support Growth Model Awareness

1. Formed a Technical Advisory Panel (TAP) that included a variety of stakeholders statewide
2. Consulted with the National Center for the Improvement of Education Assessments and Dr. Damian Betebenner
3. Created TAP Technical Manual, tools for viewing and using the results, training tools, FAQ's, and regional tours/meetings for educators, parents, and community members.
4. Created a training video to help facilitate learning – let's take a look

(Video Clips – Growth Model Defined)

# Growth Recap

For an *individual student*, growth is comparing a student's growth to all other students with a similar CSAP history using the Student's Growth Percentiles. For a *school or district*, student growth percentiles are summarized using their median scores to create a Median Growth Percentile for the school or district.

# Student Growth Percentiles

A Student Growth Percentile defines how much relative growth a student made. The Colorado Growth Model serves as a way for educators to understand how much growth a student makes from one year to the next relative to a student's "academic peers."

More specifically, the Colorado Growth Model compares each student's performance to students in the same grade throughout the state who had similar CSAP scores in past years. The model then produces a student growth percentile, much like children's height and weight percentiles that pediatricians share with parents.

If a student grew as well or better than 60 percent of her academic peers, she would have a growth percentile of 60. Individual Student Growth percentiles are categorized by "low", "typical," or "high" growth.

# Student Growth Percentile

For example, consider a low achieving student demonstrating 90<sup>th</sup> percentile growth and a high achieving student demonstrating 10<sup>th</sup> percentile growth.

- The low achieving student grew at a rate exceeding 90 percent of similar students.
- The high achieving student grew at a rate exceeding just 10 percent of similar students.
- In this sense, the low achiever's growth is more exemplary than the high achiever's.

# What is an “Academic Peer”?

Academic Peers are defined as students with a similar CSAP score history.

A similar score history is discussed in the Colorado Growth Model Technical Report available at [www.cde.state.co.us/growthmodel.asp](http://www.cde.state.co.us/growthmodel.asp). The CSAP score history examined includes two or more test scores (using all available) for a student. So, for a student who has scored Unsatisfactory the last few years, his or her growth is compared to students who have scored similarly.

# What is typical growth?

The answer depends on whether you are referring to Student Growth Percentiles or Median Growth Percentiles.

- As defined by Colorado State Board of Education rule, a Student Growth Percentile for a single child that falls within the 36th-65th percentile range reflects Typical Growth.
- When referring to Median Growth Percentiles, CDE considers the 50th percentile to be typical growth. The statewide Median Growth Percentile in each subject and grade is the 50th percentile. So it is useful to look for differences from 50 when inquiring into the relative performance of different student groups, grades, subjects, and schools. This information is particularly useful for benchmarking purposes, to understand how other schools or grades are doing in addressing priorities such as closing the achievement gap

# What is the Median Growth Percentile?

The Median Growth Percentile summarizes student growth rates by district, school, grade-level, or other subgroup of interest. It is calculated by taking the individual Student Growth Percentiles of the students in the group being analyzed and finding the median score (the middle score if you rank the scores from highest to lowest). The median is very close to the average with large numbers of students but is superior to the average when used with percentiles

# How much growth is required?

The goal, legislatively in Colorado, is that all children will be proficient or advanced by 10th grade—so CDE wants to be able to clearly show the progress necessary to reach these goals each year and evaluate whether each student's progress is adequate.

Therefore, CDE will report to each district each student's individual Student Growth Percentile and the Student Growth Percentile needed for that student to reach Partially Proficient, Proficient, and Advanced Performance within one, two or three years

# Actual, Aspirational, and Realistic Growth

Broadly, Colorado's Growth Model addresses three related questions using the same percentile metric:

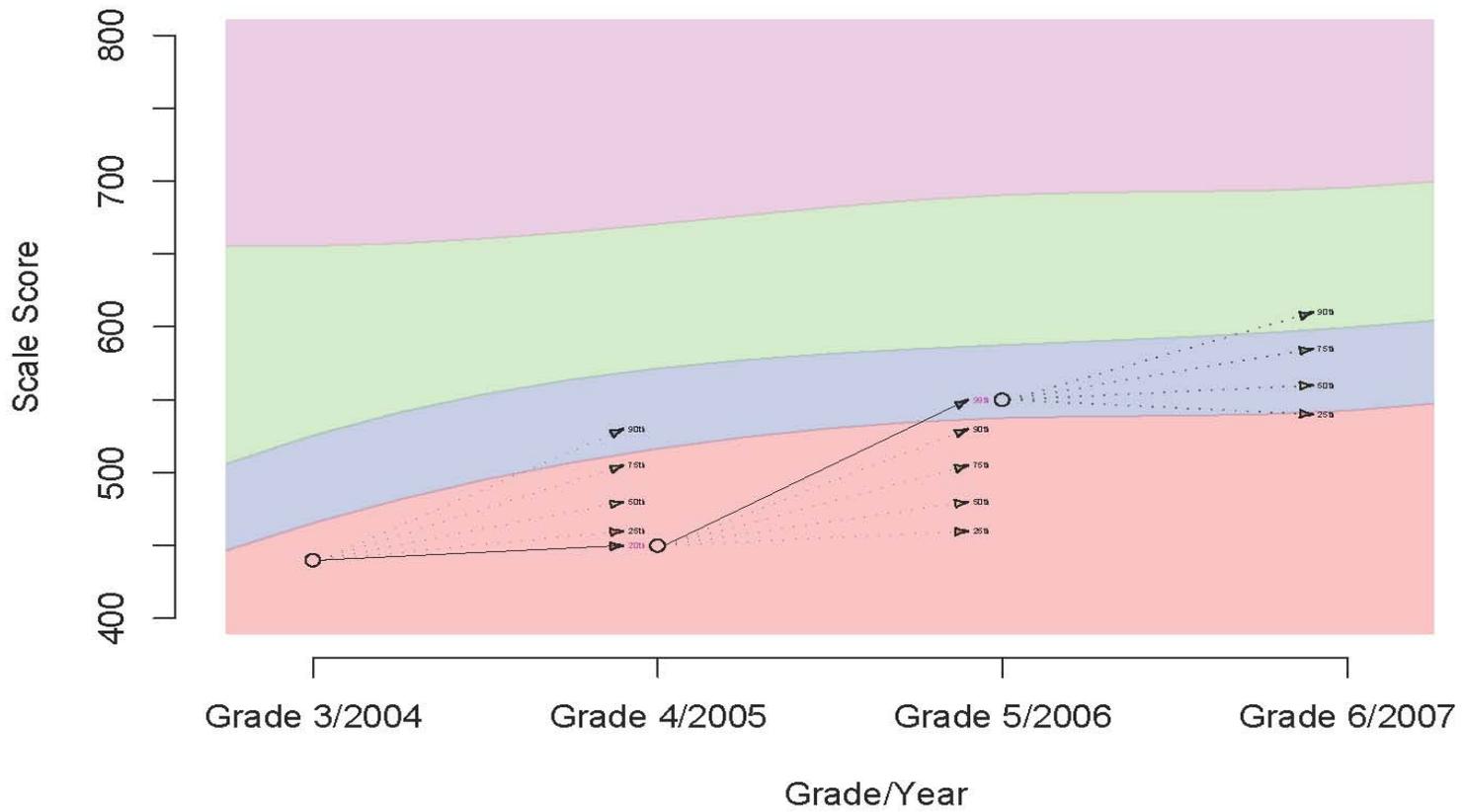
1. What is the level of growth for a student (i.e. Actual Growth)
2. What should the level of growth for a student be (i.e. Aspirational Growth)
3. What level of growth for the student is possible (i.e., Realistic Growth)

# Summary

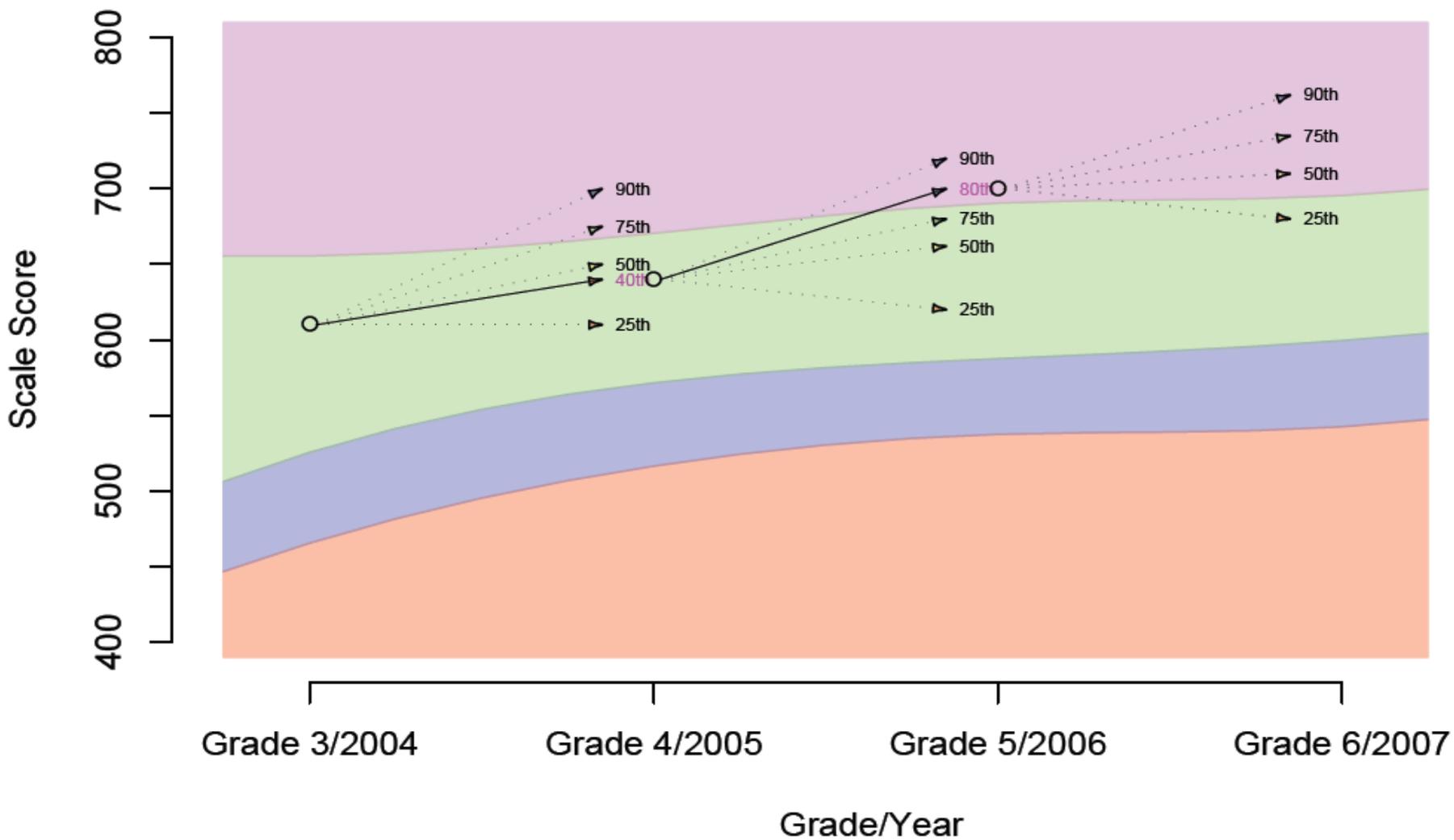
In Colorado, each student receives a growth percentile quantifying their actual growth in reading, writing and math for the academic year.

Each student will also receive the growth percentile projections estimating what level of growth is required to meet proficiency levels in one, two and three years

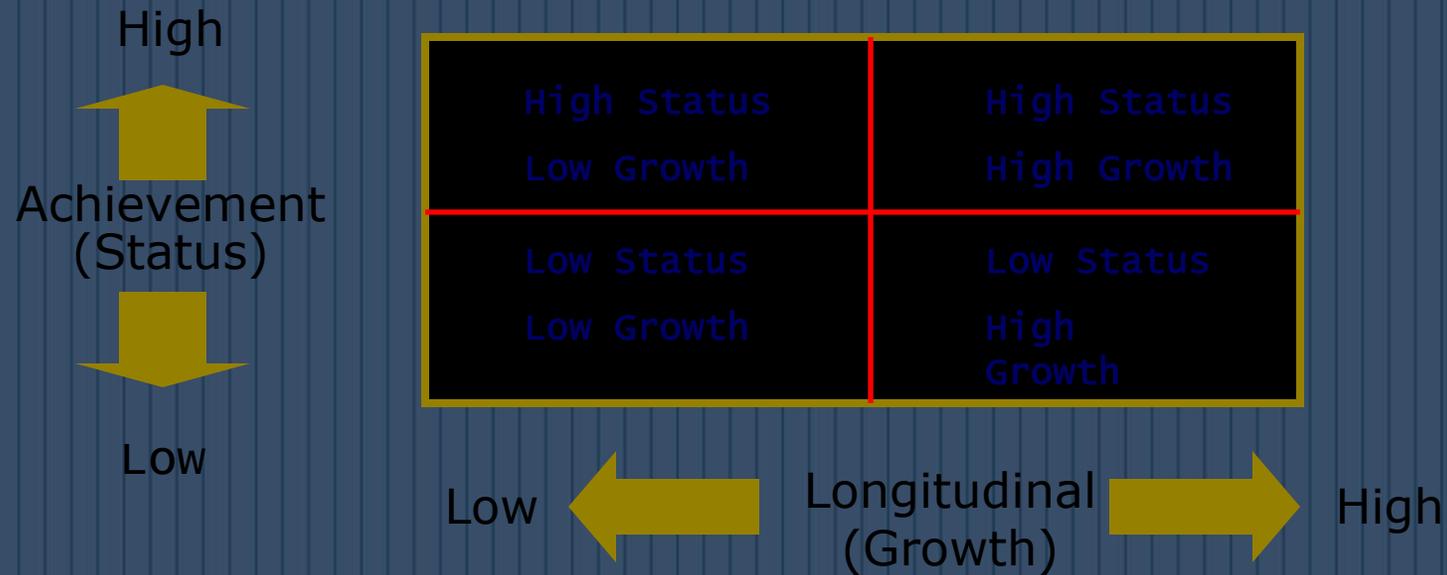
### Individual Student CSAP Growth Chart: Reading 2004 to 2007



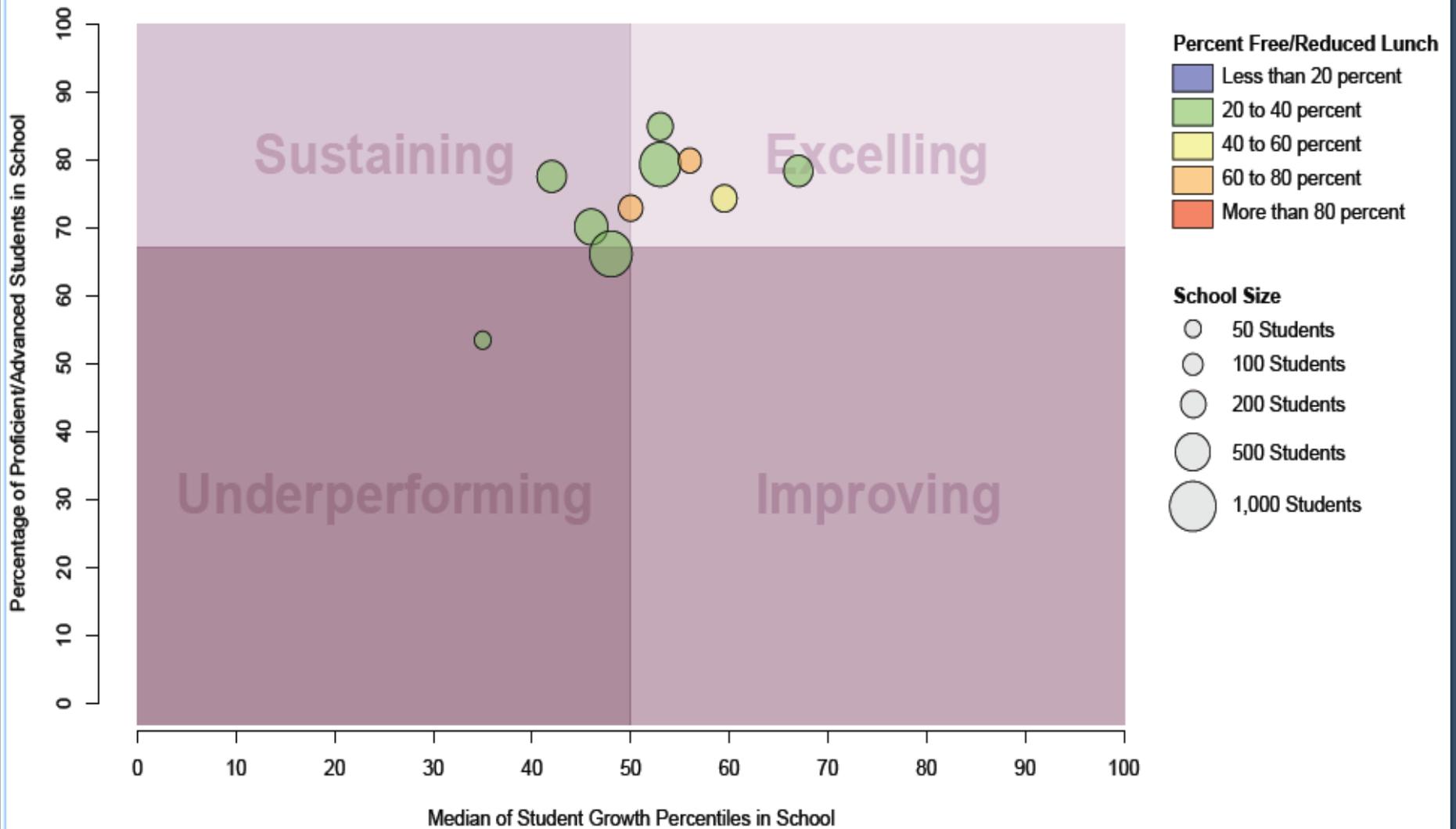
## Individual Student CSAP Growth Chart: Reading 2004 to 2007



# Understanding School Performance



### Student Growth versus Student Achievement by Free/Reduced Lunch Percentage



Note: Achievement and growth levels used to qualify school performance are presently under review by CDE and subject to revision.

# Growth Model Tools continued

- CDE Growth Model Program (Adobe AIR) – two per district – data upload by district per CDE file – limited access – updated version to come this fall
- District and School Growth Reports (see packet)
- Public reporting of district and school data at:  
<http://www.cde.state.co.us/cdeedserv/GrowthSummaries-2008.htm>  
<http://www.cde.state.co.us/cdeedserv/GrowthCharts-2008.htm>
- Links to AYP (US Dept of Ed approved request – not in use yet, though)  
<http://www.cde.state.co.us/cdeassess/documents/growth/CompleteAYPPkg010609.pdf>
- Factored in District Accreditation Status (2009-2010)

# Misc

Colorado's Growth Model Technical Advisory Panel Report:

[http://www.cde.state.co.us/cdeassess/documents/res\\_eval/FinalLongitudinalGrowthTAPReport.pdf](http://www.cde.state.co.us/cdeassess/documents/res_eval/FinalLongitudinalGrowthTAPReport.pdf)

Growth Model Tutorial:

<http://www.cde.state.co.us/media/GrowthModel/Tutorial/GrowthModelTutorial.html>

Growth Model Video with Text:

<http://www.cde.state.co.us/media/cdeedserv/growthmodel/index.html>

US Dept of Ed Approval Letter: Colorado's Acceptance into Growth Model Pilot

<http://www.cde.state.co.us/communications/download/PDF/20090108growthmodel.pdf>

# Have Technical Questions?

Email Dr. Richard Wenning,  
Deputy Commissioner, Colorado  
Department of Education at

[Growth.questions@cde.state.co.u](mailto:Growth.questions@cde.state.co.us)

[s](mailto:Growth.questions@cde.state.co.us)