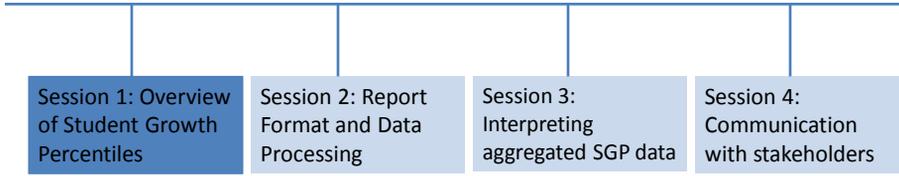
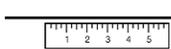
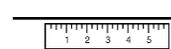


Session 1: Student Growth Percentiles in Virginia



Beginning in Fall 2011, divisions can access reports that include SOL scaled scores and student growth percentiles

SOL scaled scores in Reading and Mathematics  Proficiency

Student growth percentiles  Student progress

Reading: 4th – 8th grade
 Mathematics: 4th – 8th grade and Algebra I

Beginning in Fall 2011, divisions can access reports that include SOL scaled scores and student growth percentiles

Student	Grade 3 mathematics SOL scaled score	Grade 4 mathematics SOL scaled score
A	432	450
B	318	450

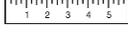


The student growth percentile captures growth while controlling for prior performance

3

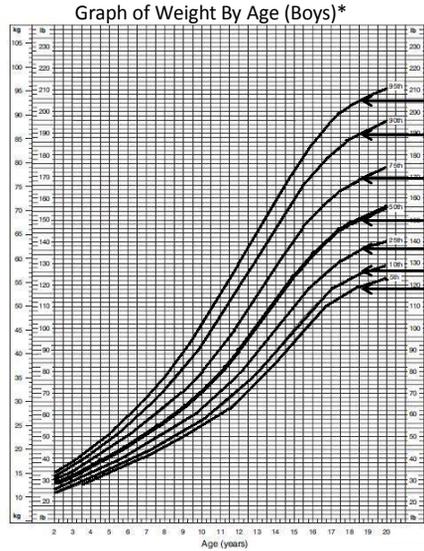
Beginning in Fall 2011, divisions can access reports that include SOL scaled scores and student growth percentiles

SOL scaled scores in reading and mathematics  → Proficiency

Student growth percentiles  → Student progress

4

The concept of student growth percentiles can be compared to an example of pediatric growth charts

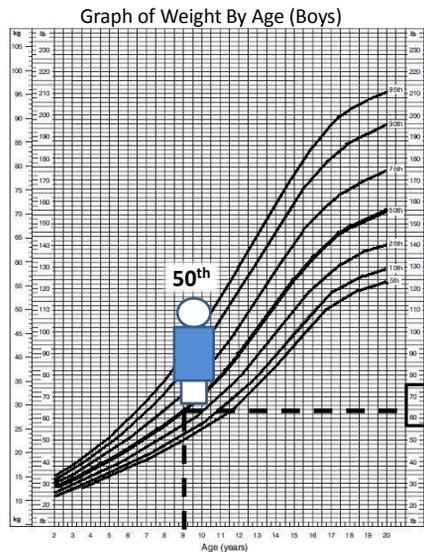


Percentiles range from 1 to 99

- 95th percentile
- 90th percentile
- 75th percentile
- 50th percentile
- 25th percentile
- 10th percentile
- 5th percentile

*Adapted from <http://www.cdc.gov/growthcharts/data/set2/chart%2003.pdf>

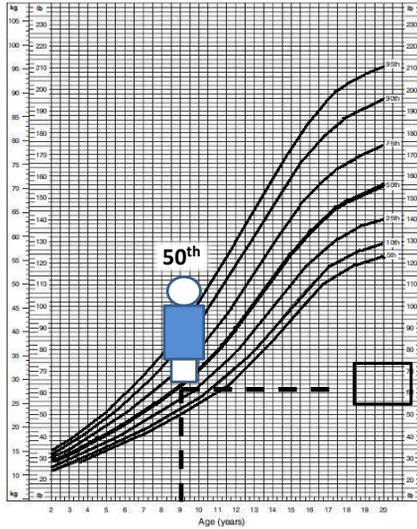
Pediatric growth charts compare a child to a group of other children who were measured at the same age



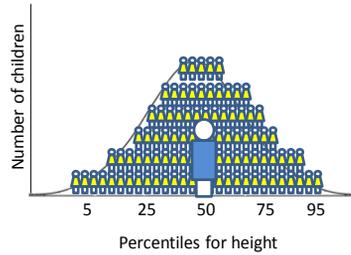
Here is a 9-year old boy at the 50th percentile for weight

He weighs more than 50% of the 9 year olds used to create the chart

Pediatric growth charts compare a child to a group of other children who were measured at the same age

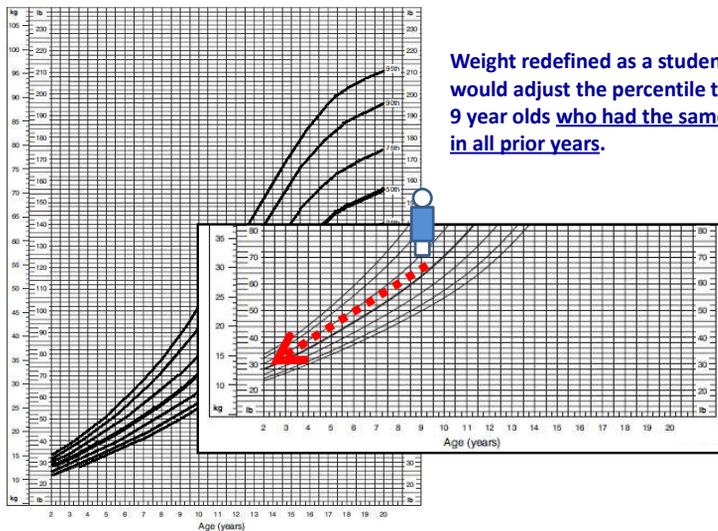


At the 50th percentile, his weight is common for a 9 year-old boy



7

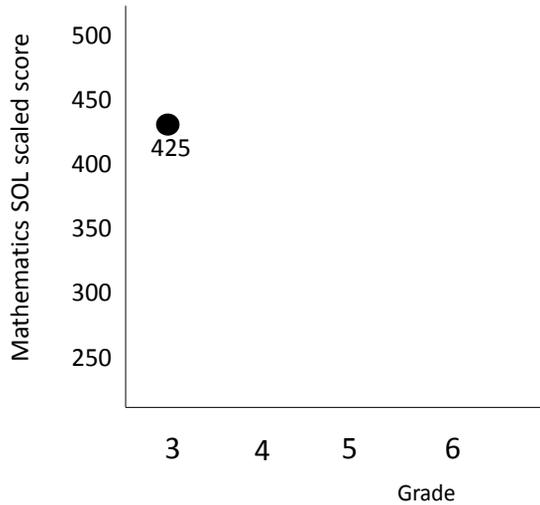
Unlike pediatric growth charts, student growth percentiles compare student achievement using historical data



Weight redefined as a student growth percentile would adjust the percentile to account for other 9 year olds who had the same weight as he did in all prior years.

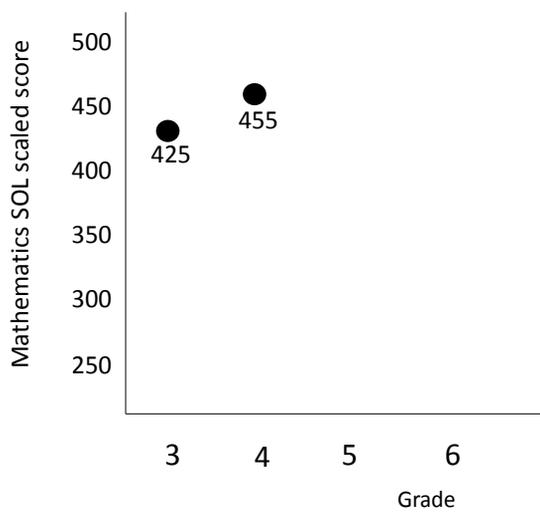
8

A student's mathematics SOL scores can be plotted from one year to the next



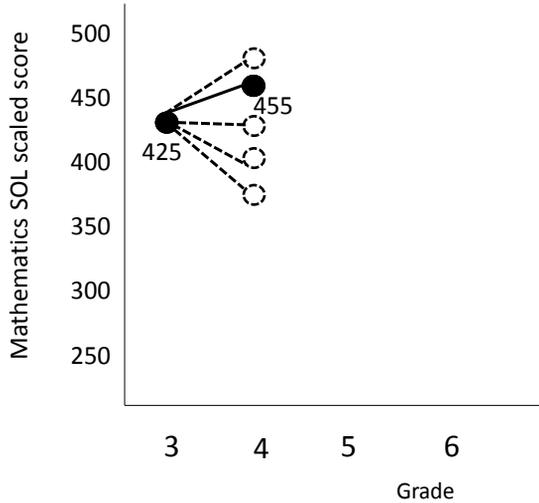
9

A student's mathematics SOL scores can be plotted from one year to the next



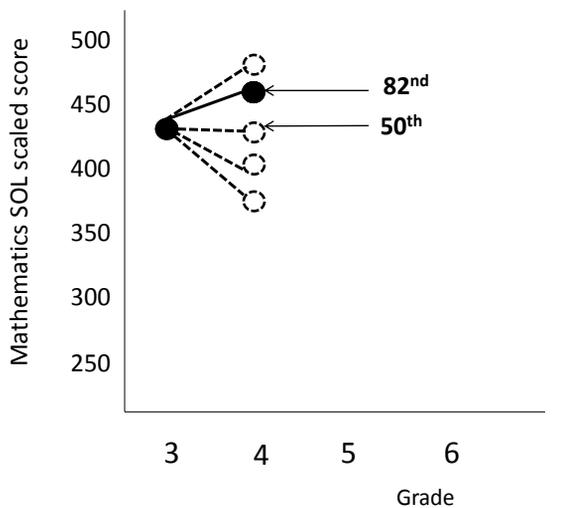
10

The fourth grade scores of students with the same third grade score can differ and form a distribution



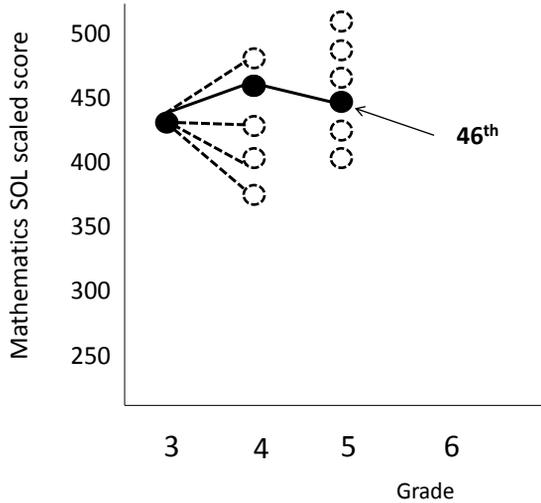
11

Comparing the example student's score to students with similar score histories yields a percentile



12

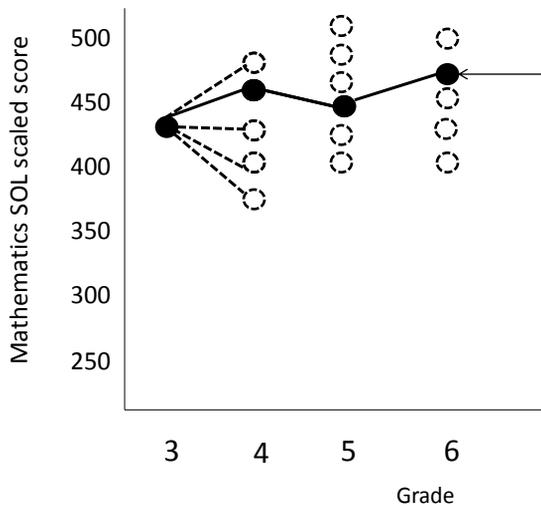
The **fifth** grade growth percentile is calculated relative to students with similar score histories at both **grades three and four**



Other students whose scores diverged from the example student are no longer considered to have a similar score history

13

The **sixth** grade growth percentile is calculated relative to students with similar score histories at grades **three, four and five**



Other students whose scores diverged from the example student are no longer considered to have a similar score history

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These students all have the same score history because they scored 400 on the Grade 3 Mathematics SOL test

Six students across Virginia	Grade 3 mathematics SOL scaled score	Grade 4 mathematics SOL scaled score
A	400	318
B	400	400
C	400	400
D	400	434
E	400	482
F	400	530

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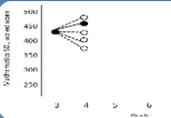
A student growth percentile compares the student's current SOL score with the scores of students throughout the state with similar score histories

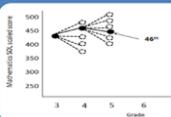
Six students across Virginia	Grade 3 mathematics SOL scaled score	Grade 4 mathematics SOL scaled score	Grade 4 mathematics student growth percentile
A	400	318	16
B	400	400	28
C	400	400	28
D	400	434	49
E	400	482	64
F	400	530	89

16

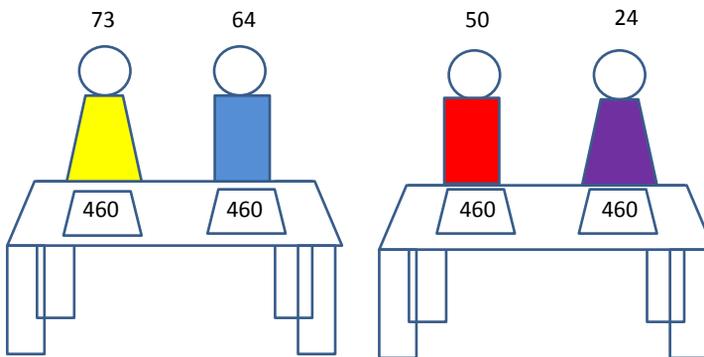
Three important features of the student growth percentile promote comprehension and interpretation of scores

SGP: 1-99 Student growth percentiles range from 1 to 99

 A student growth percentile compares the student's current SOL score with students throughout the state

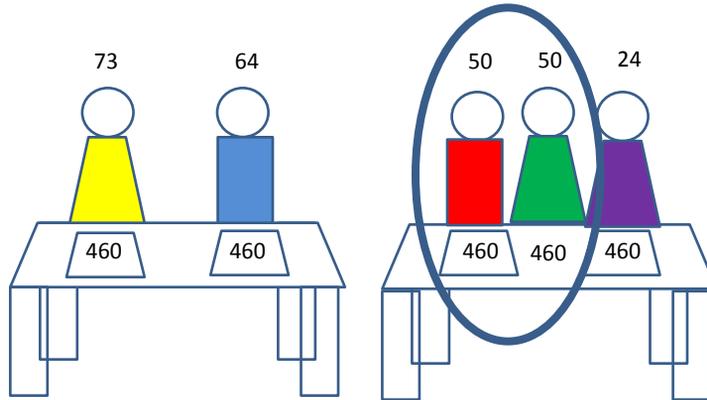
 Each year, a student's growth percentile is calculated in reference to other students with the same test taking sequence and score history

Students in the same class with the same SOL score may have different growth percentiles



Students are compared across the state to others with similar score histories, regardless of class or school

Students in the same class with the same SOL score may have different growth percentiles

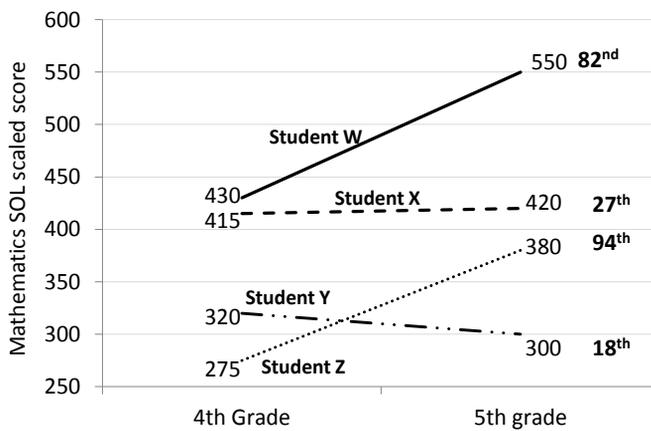


What can we conclude about these two students?

These students must have similar score histories because they both achieved the same growth percentile between their prior score and their most recent score

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Comparison of growth and SOL achievement



Discuss growth in the context of proficiency for these students at fifth grade

20

Session 1 Activity 1

Table 1. Suzie's scores

Student	3 rd grade	4 th grade	5 th grade	SGP associated with 5 th grade score
Suzie	270	300	365	70

How would you describe Suzie's 5th grade scaled score?

Suzie's 5th grade scaled score indicates that she did not pass the test.

What can you tell from Suzie's growth percentile of 70?

At fifth grade, Suzie outperformed 70 percent of students with similar score histories.

What have you gained from knowing that her growth percentile was 70 even though her score was 365?

Suzie experienced high growth in the prior year; this is encouraging.

Can you calculate Suzie's growth percentile just by knowing her previous years' scores?

No, because we do not have the distribution of scores from students with similar score histories.

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Table 2. Scores for Suzie and a selection of students with similar score histories

Student	3 rd grade	4 th grade	5 th grade	SGP associated with 5 th grade score
Peer student A	270	300	290	22
Peer student B	270	300	310	40
Peer student C	270	300	330	53
Suzie	270	300	365	70
Peer student D	270	300	380	88

Look at all the students' 4th and 5th grade scores in relation to the 5th grade growth percentiles. For the group as a whole, how do the growth percentile numbers relate to the difference between the 4th and 5th grade scores?

Because the data represent a portion of the state-wide group of students with a similar score history to Suzie, the difference between the 4th and 5th grade scores does relate to the growth percentile.

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Table 3. Scores for Suzie and her classmates

Student	3 rd grade	4 th grade	5 th grade	SGP associated with 5 th grade score
Suzie	270	300	365	70
Victor	310	340	365	30
Keisha	410	435	460	60
Dante	400	-	460	-
Jamar	-	470	500	50
Mya	260	290	335	65
Zachary	420	450	440	8

Explain to their 5th grade teacher how Suzie and Victor achieved the same 5th grade scaled score but different growth percentiles.

Suzie and Victor's growth percentiles are based on two different distributions of scores that reflect their different score histories.

Does Victor's growth percentile of 30 have any relation to Suzie's growth percentile of 70?
No, the two numbers are not directly comparable to one another.

How can Suzie and Mya have almost the same growth percentile, but different achievement?

Relative to each student's state-wide comparison distribution, Suzie and Mya achieved a similar percentile. The scores associated with each distribution will differ.

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Table 4. Data including previous growth percentiles for Suzie and her class

Student	3 rd grade	4 th grade	5 th grade	SGP associated with 5 th grade score
Suzie	270	300	365	70
Victor	310	340	365	30
Emily	410	435	460	60
Dante	400	-	460	-
Jamar	-	470	500	50
Mya	260	290	335	65
Zachary	420	450	440	8

Why does Jamar but not Dante, have a student growth percentile?

Jamar has two consecutive years' worth of data; Dante does not.

Should Zachary's teacher be concerned about his performance, given his scaled score and growth percentiles?

Zachary is achieving at the pass proficient level but his progress relative to other students in the state who also have this score history, is low.

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Student	3 rd grade	4 th grade	5 th grade	SGP associated with 5 th grade score
Suzie	270	300 (30)	365	70
Victor	310	340 (25)	365	30
Keisha	410	435 (40)	460	60
Dante	400	-	460	-
Jamar	-	470	500	50
Mya	240	290 (35)	335	65
Zachary	390	450 (85)	440	8

Do you notice any trends, patterns or discrepancies? Which students would we be most concerned about, and why?

Suzie, Victor, and Mya show low achievement and are not meeting minimum proficiency levels. They all raise concerns. Victor also shows low relative growth for two consecutive years, which may raise additional concerns.