

Where to start...

When examining data in relation to a student or group of students, it is important to first determine the lens in which to look at the data. A specific intent is necessary in order to effectively interpret and use the data for decision-making. Therefore, the first step in collecting data and interpreting assessment results is to determine the objective. The objective may be to examine a class or school as a whole, to examine a particular student's performance or to use data to make instructional programmatic decisions. Once the intent is clear, there are some guiding questions to begin looking at the data.



Start Digging

It is important to see global trends *before* digging into individual student data.

A place to begin is at the Florida Department of Education's FCAT Results Interactive Search by School and District (<http://fcat.fldoe.org/results/default.asp>.) On this site, searches at the state, district, or individual school site is available. When creating a search, be sure to include three or more years of data. The purpose of this initial search is to find yearly trends.

One way to find trends is to look diagonally. On example 1, it may be thought that there was no change

How to Collect and Showcase Your Mathematics Data and Assessment

Whole Group

What trends do you see across the group of students?
 What further assessments are needed to make decisions?
 Where are the discrepancies in data between sources of information?
 What is the hypothesis for changes in scores? What evidence is there of this?

Individual Student Questions

Is the data a true reflection of the student's ability?
 What do you know about the student that may have influenced performance?
 Where are there discrepancies in data between sources?
 What assessments most accurately affect the true ability of the student?
 What is the hypothesis for changes in scores? What evidence is there of this?
 What additional data is needed to make instructional decisions?

Program Decisions related to Data

Does the program show evidence of increasing student scores?
 Is the program in the students' best interests?
 Does the program correlate to needs of the students?
 What other programs are similar and how is the one being considered different from those?

School Percent Scoring Three and Above				
Grade Level	Mathematics			
	2005	2006	2007	2008
6	62	64	58	54
7	64	71	63	76
8	70	70	75	85

Example 1

in the number of students scoring a three and above on the 8th Grade FCAT Mathematics from 2005 to 2006. Looking diagonally shows a different picture. The 8th graders in 2006 were 7th graders in 2005. The highlighted boxes above show a growth of 6% more students score at a 3 or above on the FCAT Mathematics test.

Digging Deeper

On the same interactive report (<http://fcats.fldoe.org/results/default.asp>) there will be a summary for each grade level that will include the percent of students in each FCAT Achievement Level.. Lets continue looking at the 2005 7th grade and 2006 8th grade Mathematics data.

Look at the highlighted areas in Example 2. What stands out?

Notice that the number of students tested is approximately the same and the Mean Developmental Scale Score (DSS) rose 84 points. The Mean Scale Score cannot be compared because each grade level 's scale score is different. Also notice that there was a large drop in the percentage of students scoring in Achievement Level 1

Grade 7

Mathematics Scores									
				Percentage of Students by Achievement Level					
Year	Students Tested	Mean DSS	Mean Scale Score	1	2	3	4	5	Level 3 & above**
Manatee									
2005	351	1834	317	16	20	30	28	6	64
2006	323	1875	327	11	18	35	23	13	71

Grade 8

Mathematics Scores									
				Percentage of Students by Achievement Level					
Year	Students Tested	Mean DSS	Mean Scale Score	1	2	3	4	5	Level 3 & above**
Manatee									
2005	395	1926	328	10	20	38	16	16	70
2006	349	1918	326	9	20	37	21	12	70

Example 2

and a sizable increase of students scoring in Achievement Level 5. This is just the first data set. The next thing to do is to look at particular strands of Mathematics at particular grade levels.



Strand Data

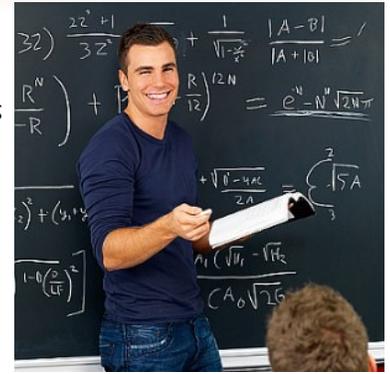
After finding some trends, it is time to dig a little deeper. Lets look at how students in a particular grade fair at the 5 Mathematics strands. District data and individual school data can be found at <http://fcats.fldoe.org/fcinfo/pg.asp>. This site provides percent of students in each of the five FCAT achievement levels and the number of mean points earned in each of the five strands of mathematics. Compare

the data from a school to the district results and look for both the strengths and areas of need. It is important to use the strengths of a school to address the area(s) of need.



Informal Classroom Measures—Leading Data

Assessment goes beyond standardized tests. Instruction is responsive to students and must meet their learning needs on a daily basis. Therefore, students must be assessed regularly. These assessments are generally informal in nature and are designed to directly impact and drive instruction. The objective is to obtain information regarding the match between each student and the material to be learned. This includes experiences or background knowledge, the student's ability to process new information, and the level of mastery after instruction.



Pre-Assessment Strategies

STRATEGY	INSTRUCTIONAL PROCESS	PURPOSE AND COMMENTS
Pre-tests of facts and skills	Students complete an assignment to reflect what they already know and can do.	Students must be clear on the expectation and purpose of the pre-test. These should not count as grades. Data should be collected to compare with post instruction.
Surveys	Students complete a survey for information about knowledge, working styles, or other areas where there is flexibility to differentiate instruction.	A survey should only ask questions that are in areas that can be later used to differentiate instruction.
Prediction Question	Students are presented with a condition and asked to predict the outcome.	This is designed to identify conceptual understandings in place before instruction.

Assessment Strategies During Instruction

STRATEGY	INSTRUCTIONAL PROCESS	PURPOSE AND COMMENTS
Response Cards	Each student in the class has a card, white board or paper. A question is asked and all students are expected to respond by holding up the response card to indicate the answer.	This strategy fosters on-task behavior. It provides a snapshot of the class as a whole but does not lend itself well to individual student data.
Partner/ Cooperative Learning and Observation	In pairs or small groups, students work together on a skill or task. As this is happening, observational data is collected by the teacher.	This strategy works well after there has been clear instruction and students are nearing mastery of a skill or concept. All students should have clear roles.
Timed drills	Students complete a drill in a set amount of time.	This strategy measures fluency of facts or skills. It provides quantitative data. It can foster stress in some students.

Post-Instructional Assessment

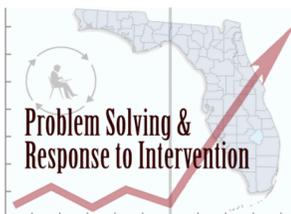
STRATEGY	INSTRUCTIONAL PROCESS	PURPOSE AND COMMENTS
Exit Cards	Students are asked a short answer response question. Each student answers the question on a card and turns it in on the way out the door.	This is a way to determine instructional groupings for the following day and collect measurable data.
Post tests	Students complete an assignment the same or similar to a Pre-test to reflect what they have learned.	This strategy lends itself to the measurement of growth in learning. It reflects the growth from before instruction to after instruction.
Products in conjunction with Rubrics	Students are provided with a rubric stating clear expectations for the design of a product. Students create a product of choice based on the rubric.	This strategy allows for student choice and fosters student responsibility and empowerment. It allows highest achieving students to go as far as they want in an area of study.

Formal Classroom Measures—Leading Data

Educators can use local resources to obtain formal leading mathematics data. District created Benchmark Assessments, classroom assessments such as tests and quizzes, and assessments from purchased mathematics programs can measure a student’s progress towards the current grade level’s benchmarks. To be able to obtain reliable data, be sure that the items measure the Sunshine State Standard benchmark. Items that are not on grade level can skew the results.

Once the data is collected, go beyond the percent correct, and identify common misunderstandings. On multiple choice items, look for items where many students choose the same distracter. Understanding the error the students made in answering the item aides the teacher in the remediation of a student. For gridded response items, look for both common incorrect answers and grids that are incorrectly filled in.

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Resources

The Florida Department of Education provides many free resources. Below are a few that can be obtained from the FCAT website (<http://fcat.fldoe.org/>).

NAME	DESCRIPTION	SITE
FCAT Released Tests	This site contains FCAT Released Tests that should be used to increase the comfort level of students and parents with the FCAT and to illustrate the length of an actual test and the difficulty of the questions on the test.	http://fcat.fldoe.org/fcatrelease.asp
FCAT Explorer	This is an online resource for students and educators. A sign-in name and password is needed.	http://www.fcatexplorer.com/
Florida Achieves	This site starts from the FCAT Explorer site. Below the title “FCAT” is a sub heading “Florida Achieves”. With a FCAT Explorer sign-in, educators can access the Florida Continuous Improvement Model home page. This site gives benchmark specific items by content and grade level.	http://www.fcatexplorer.com/
Sample FCAT Tests	This site contains the electronic version of the sample FCAT question distributed to schools.	http://fcat.fldoe.org/fcatsmpl.asp
SharePoint	This site is for educators and other stakeholders to access FCAT-related materials from the Test Development Center presentations.	http://sharepoint.leon.k12.fl.us/tdc/external/default.aspx
FCAT Item Specifications	This site describes the test items in the FCAT assessments. The specifications are guidelines for item writers and reviewers	http://fcat.fldoe.org/fcatis01.asp