

# Formative Assessment

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## Objectives

By the end of this presentation, you will be able to:

- ▶ Identify purposes and uses for formative assessment;
- ▶ Understand how formative and summative assessment can work together;
- ▶ Consider ways to make formative assessment systematic and integrated with instruction.

## K-W-L

With a partner discuss...

- ▶ What you already **KNOW** about assessment.
- ▶ What you **WANT** to learn about assessment.

## Types of Assessments

### Summative

- ▶ Measure and document the extent to which students have achieved a learning target

### Formative

- ▶ Inform instruction and provide feedback to students on their learning

### Diagnostic

- ▶ Identify underlying reasons for learning difficulties
- ▶ Become formative when data is used to inform instruction

All assessments are designed to answer specific questions.

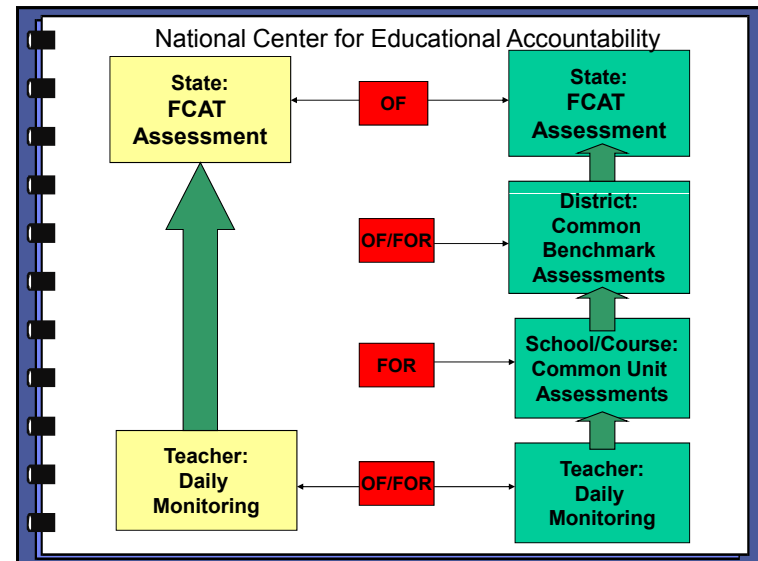
## Formative and Summative Assessments

- ▶ Answer different types of questions
- ▶ Provide data which are utilized for different purposes
- ▶ Are both important as part of a complete assessment package

- ### Formative Assessments

  - ▶ Provide data which are used **FOR** instruction
  - ▶ Conducted throughout the instruction cycle
  - ▶ Can be both formal and informal
  - ▶ Used to plan or redirect instruction and intervention
- ### Summative Assessments

  - ▶ Provide evidence **OF** student learning
  - ▶ Typically conducted at the end of a learning cycle
  - ▶ Used to assign grades, evaluate programs, or for student placement



Formative assessment is defined by **use**, not the assessment method

- ▶ Assessments are only formative if the data is used to inform and redirect instruction
- ▶ Even traditionally regarded summative assessments can be used in a formative application

Formative assessment is essential to ALL steps of the problem solving process

- Problem Identification
  - What is the difference between what students know, understand, and can do and expected levels?
- Problem Analysis
  - Why is there a difference between current levels and expected levels?
- Instruction/Intervention Design and Implementation
  - What will I do to address the underlying reasons for this discrepancy?
- Response to Intervention
  - How did it work?

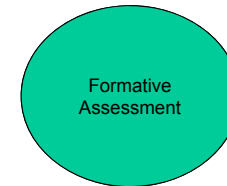
### Discussion Points



- ▶ What is the current ratio of summative to formative assessments in your classroom/school?
- ▶ Identify summative assessments that could be used in a formative application.
- ▶ What would need to occur in order for this transition to take place?

### Moving from Summative to Formative Assessment

- ▶ Planning
- ▶ Collecting
- ▶ Analyzing
- ▶ Data-based Decision Making
- ▶ Reporting



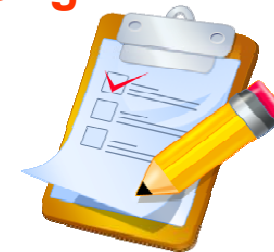
## Planning

- ▶ Determine questions that need to be answered throughout the learning cycle
- ▶ Prioritize and Sequence
- ▶ Determine the most efficient and least intrusive method of data collection
- ▶ Embed formative assessments into lesson plans
- ▶ Don't wait until the end to assess
- ▶ Integrate assessment with instruction
- ▶ Anticipate student needs and allow for differences during the lesson cycle



## Collecting

- ▶ Questioning
- ▶ Observations
- ▶ Checklists
- ▶ Oral presentations
- ▶ Written responses
- ▶ Traditional tests
- ▶ Portfolios / work samples
- ▶ Student self-assessments
- ▶ Classroom tasks/ experiments
- ▶ Exit Slips



## Analyzing



What does the data tell me regarding my students...

- ▶ Readiness for learning?
- ▶ Progress towards mastery?
- ▶ Ability to apply knowledge and skills to new contexts and situations?

## Data-Based Decision Making

- ▶ What have I learned from analyzing the data?
- ▶ Do I need to redirect instruction?
  - ▶ For all or most students?
  - ▶ For some students?
  - ▶ For specific students?
- ▶ What instructional strategies or interventions will I utilize to meet the needs of my students?



## Reporting

- ▶ Who needs to know the results of my assessments?
- ▶ How often will I provide the stakeholders with feedback?
- ▶ Which reporting format is best for various groups of stakeholders?
  - ▶ Written
  - ▶ Verbal
  - ▶ Graphs



## Turn and Talk



Given what you have learned so far about the purpose and utility of formative assessment...

### Teacher

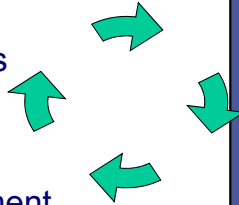
- How will I incorporate more formative assessments within my instruction and planning?

### Administrator/Coach

- How can I support the use of formative assessments within my district/school/department?

## Instruction and Learning Cycle

- ▶ Student Misconceptions
- ▶ Engagement and Readiness
- ▶ Eliciting Prior Knowledge
- ▶ Exploration and Discovery
- ▶ Concept and Skill Development
- ▶ Concept and Skill Transfer
- ▶ Reflection and Self Assessment




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Guiding Questions	Science Examples
What are my students' misconceptions?	Do my students believe that animal and plant cells are the same in terms of structure and function?
What are my students' interest and level of preparation?	What do my students already know about plant and animal cells? Are my students interested in learning about cell structure and function?
Are my students developing an understanding of key terminology and concepts through the exploration and discovery activities?	Are my students beginning to challenge their own or others' misconceptions regarding the structure and function of plant and animal cells?
Do my students understand key scientific terminology and concepts?	Can my students use scientific terminology and concepts to compare and contrast the structure and function of plant and animal cells?
Can my students apply ideas and skills in new contexts and situations?	Can my students apply the functions of cell organelles to human body parts?
Can my students reflect upon and assess their own understanding of the key scientific terminology and concepts?	Can my students articulate how their understanding of cell structure and functions has developed utilizing specific examples and key terminology and concepts?

Science Example Questions	Formative Assessment Options
Do my students believe that animal and plant cells are the same in terms of structure and function?	Four Corners Fist of Five
What do my students already know about plant and animal cells?	<b>FIRST WORD-LAST WORD Acrostic</b> KWL
Are my students beginning to challenge their own or others' misconceptions regarding the structure and function of plant and animal cells?	Think-Pair-Share Thinking Log Scientists Ideas Comparison
Can my students use scientific terminology and concepts to compare and contrast the structure and function of plant and animal cells?	VENN Diagram T-Chart Graphic Organizer
Can my students apply the functions of cell organelles to human body parts?	Two Thirds Testing Synectics
Can my students articulate how their understanding of cell structure and functions has developed utilizing specific examples and key terminology and concepts?	<b>FIRST WORD-LAST WORD Acrostic</b> Three Minute Pause KWL

### Data-Based Decision Making

Question	Data	Decision
What do my students already know about plant and animal cells?	All students know... <ul style="list-style-type: none"> <li>▶ Animal and plant cells have some structural differences</li> <li>▶ Plant cells make their own food</li> </ul>	Focus on... <ul style="list-style-type: none"> <li>▶ specifics of cell structural differences</li> <li>▶ Expanding knowledge of differences in cell function</li> <li>▶ Expand knowledge of photosynthesis</li> </ul>
Can my students use scientific terminology and concepts to compare and contrast the structure and function of plant and animal cells?	All students can compare and contrast plant and animal cell function but few can use scientific terminology to identify and describe cell structures and functions	

### Reporting

Question	Data	Who Needs to Know? Why?
What do my students already know about plant and animal cells?	All students know... <ul style="list-style-type: none"> <li>▶ Animal and plant cells have some structural differences</li> <li>▶ Plant cells make their own food</li> </ul>	Students: Validate prior knowledge, develop curiosity, motivate  Teacher: Determine instructional focus and concepts to emphasize
Can my students use scientific terminology and concepts to compare and contrast the structure and function of plant and animal cells?	All students can compare and contrast plant and animal cell function, but few can use scientific terminology to identify and describe cell structures and functions	

- ### The Power of Collective Inquiry
- ▶ Don't go it alone!
  - ▶ Work collaboratively with other teachers to implement a formative assessment system
  - ▶ Develop and utilize common formative assessments
  - ▶ Build time into team, school, department, and PLC meetings to examine and discuss formative assessment data

Guiding Questions for Professional Learning Communities

**What percent of our students have mastered the benchmark?**

**Does our students' data indicate that some instructional approaches may be more effective than others?**

**What common errors did our students make?**

**What will we do for students who have not mastered the benchmark?**

**How will assess if students have mastered the benchmark following re-teaching?**

## K-W-L

With a partner review...

What you already **KNEW** about formative assessment

▶ Did you have any misconceptions?

What you **WANTED** to learn about formative assessment

What you **LEARNED** about formative assessment that you did not already know