



Designing
Formative Assessment:
a workshop for K-12 teachers

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SURN at William & Mary

Learning Agreements

- Be present.
- Step up and step back.
- Listen as a learner & stay curious.
- Acknowledge one another as equals.
- Embrace ambiguity and messiness.
- Pause in moments of discomfort.



Intended Learning Outcomes

- A System of Formative Assessment (understand, apply)
- Characteristics of a Formative Assessment Classroom (understand)
- Formative Assessment Techniques (recall, understand, apply, analyze, create)
- The Formative Assessment Process (recall, understand, apply, analyze, evaluate, create)



evaluation

instruction

learning

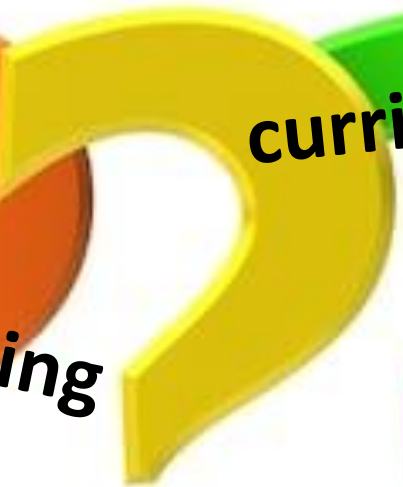
curriculum

grading

reliability

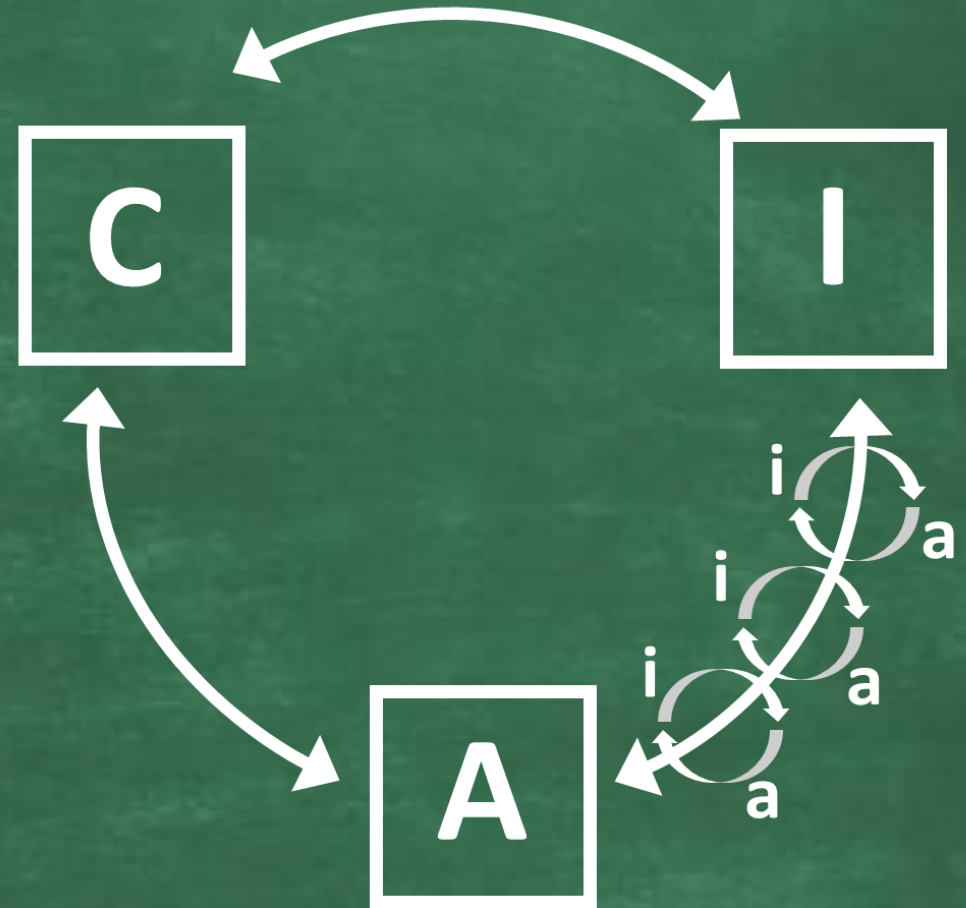
assessment

validity



What is assessment?

The use of techniques & tools to gather information about the nature & degree of student learning



Assessment in a Nutshell

C

What do we *intend* for students to know, be able to do, and to value?

=

A

What *evidence* would dependably convince us that each student has these?



A Balanced System of Formative Assessment

	Benchmarks	Quizzes	Daily Assessment
Number of Intended Learning Outcomes			
Scope			
Creator(s)			
Proximity to Instruction			
Mode			

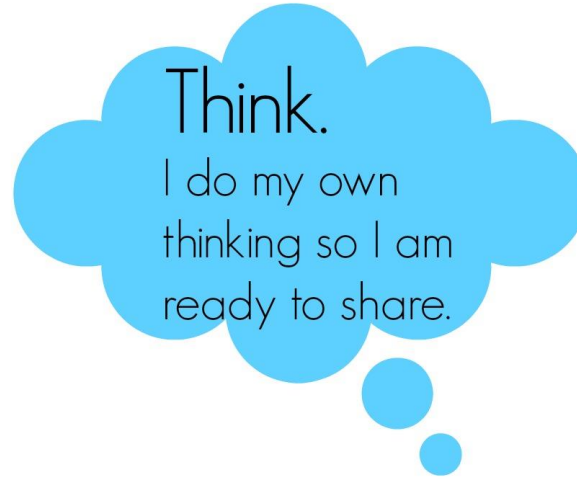
What's True of All of These?

- Progress student learning
- Make student learning visible
- Necessitate feedback (immediate and near-term)
- Facilitate instructional decision making (immediate and near-term)



Turn & Talk...

- How frequently do students engage in these 3 types of formative assessment in your setting?
- In your experience, what happens with the student work generated by each of these types of formative assessment?
- How does/could each of these types of formative assessment progress student learning?



A Balanced System of Formative Assessment

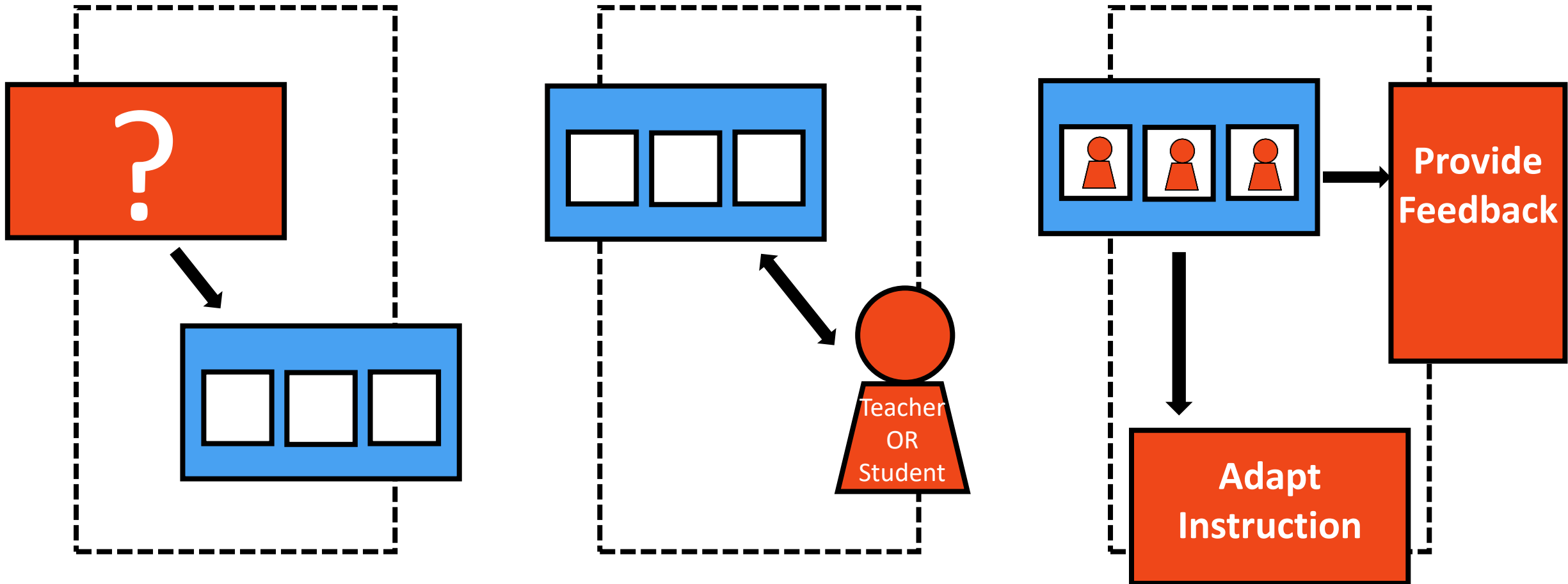
	Benchmarks	Quizzes	Daily Assessment
Number of Intended Learning Outcomes	Many	Several	1 or 2
Scope	Yearlong	Unit/Chunk	1-3 Days
Creator(s)	Teacher/Division	Teacher/Textbook Company	Teacher
Proximity to Instruction	Separate/Long-term	Close, but Separate	Part of It
Mode	Paper/Computer	Paper/Computer	Anything Goes

Formative Assessment: An Intentional Process

Elicit & Capture

Analyze & Infer

Communicate & Use



Formative Assessment

The diagram consists of a large blue circle containing three smaller red circles. The text 'Formative Assessment' is centered at the top in white. Below it, three red circles are arranged in a triangular pattern, each containing white text: 'Elicit & Capture' on the left, 'Analyze & Infer' at the bottom center, and 'Communicate & Use' on the right.

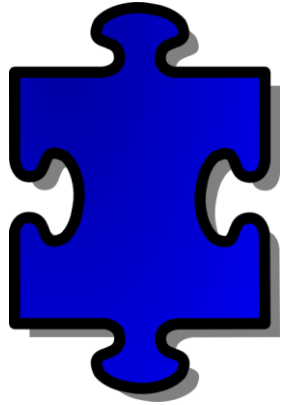
Elicit & Capture

Communicate & Use

Analyze & Infer

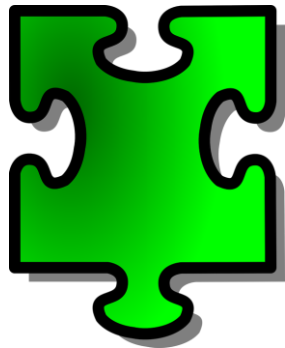
What's needed to do this well?





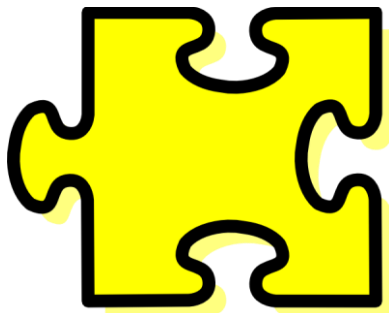
Knowledge of...

- concepts and structure of content area
- appropriate pedagogies
- assessment practices
- common misconceptions and errors



Skills in...

- creating supportive culture
- making accurate inferences; interpreting evidence correctly
- translating interpretations into instructional actions



Disposition to...

- view FA and instruction as inseparable
- consider teachers and students as partners in learning
- believe that assessment should inform learning

Characteristics of a FA Classroom

- The classroom culture values ideas, not answers.
- The class is a discourse community.
- Students know the intended learning outcomes and the success criteria.
- Students are willing to take risks.
- Students listen carefully.
- Students respond respectfully.
- Students are adept at giving and receiving feedback.
- Students are engaged in their learning.
- Students engage in frequent reflection & metacognition.
- The teacher is not the only teacher in the room.
- The teacher is a facilitator/conductor.
- The teacher is cognizant of and uses common misconceptions & errors effectively.
- Instruction is intentional.

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Elicit & Capture

Communicate & Use

Analyze & Infer



Formative Assessment

**Elicit & Capture:
Techniques that
provide opportunities
to formatively assess
students**

“FA is NOT a set of techniques you adopt or add. FA is a philosophy of teaching that holds that the purpose of assessing is to inform learning, not merely audit it.”

(Moss & Brookhart, 2009, p. 14)

ABC Brainstorming
Agree/Disagree Statements*
Analogies
Bunny Ears*
Calendar Play*
Carousel Brainstorm
Charades
Checklist
Choral Response
Cloze Procedure
Commit & Toss
Concept Maps
Conferences
Confidence Indicator
Counting Choir*
Create the Problem*
Demonstration Stations
Discussions
Double Entry Journals
Drawings
Effort Meter
Every Graph Tells a Story*
Examples/Non-Examples*
Exit Slips (License to Leave)
Fact Storming
Feedback Request
Find Someone Who...
Fishbowl
Fist to Five
Four Corners
Give One/Get One
Graffiti Wall (Collage)

Human Scatter Graph*
Graphic Organizers
Human Place Value*
Idea Wave
Inside/Outside
Is It Fair?*

Know/Want to Know/Learned (KWL)
Learning Logs & Charts
Mad Minute*
Matching Cards*
Mathematician's Ideas Comparison*
My Textbook Page
Non-Verbal Signals
Numbered Heads
Numbers on the Line*
Observations
Odd One Out*
One-Minute Essays
One-Minute Fluency
Open-Ended Questions
Pass the Problem*
Planning Charts
Pictionary
Picture Notetaking
Placemats
Pop-Up Indicator
Portfolio
Problem Solving
Process Exemplars
Product Exemplars
Progress Maps
Questionnaires

Questioning
Reflection Journals
Repeat Pre-Assessments
Repeated Directions
Rubric Application
Rubric Translation
Self-Marking Quizzes
Sentence Prompts
Sniglets
Socratic Seminar
Sorts (Open & Closed)
SOS Summary
Spinner
Sticky Bars*
Strategy Probe*
Student-Generated Test Questions
Take a Stand
Teach a Friend
Think-Pair-Share
3D
Three Facts and a Fib
3,2,1
Thumbs Up, Thumbs Down
Traffic Light
Turn & Talk
Twelve-Word Summary (Tweet It)
Vote with Your Feet
What I Know/Don't Know
What Not to Do
Whip Around
Whiteboards
Why Boxes
Writing Continuums



TIME FOR A BREAK

Here's a little story...



ABC Brainstorming
Agree/Disagree Statements*
Analogies
Bunny Ears*
Calendar Play*
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What Not to Do
Whip Around
Whiteboards
Why Boxes
Writing Continuums

How would you sort these FA Techniques?

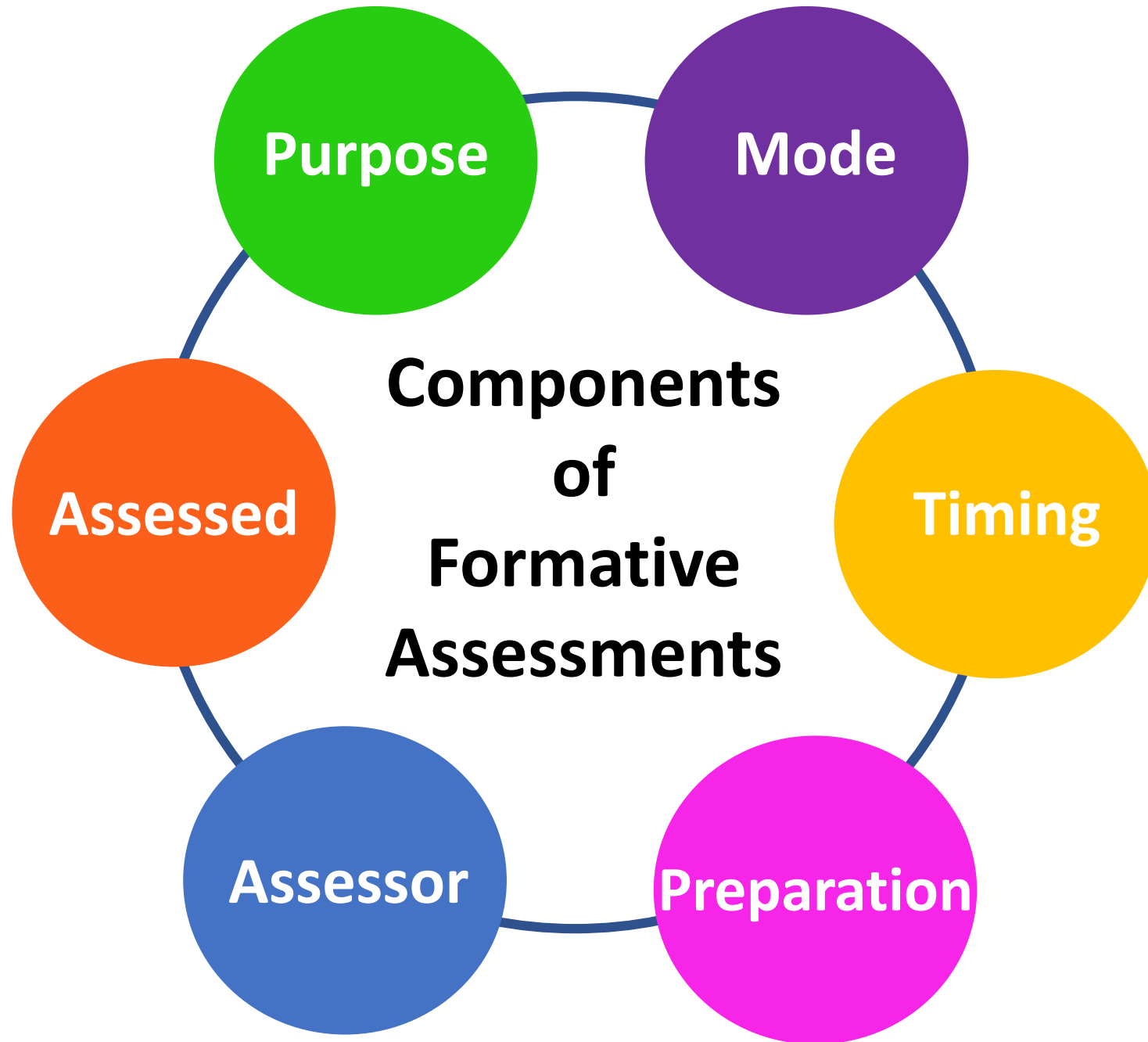
- Charades
- Dry Erase Boards
- Exit Slips
- Goal Setting Charts
- Graffiti Wall
- Graphic Organizers
- Mad Minute
- Socratic Seminar
- Turn & Talk

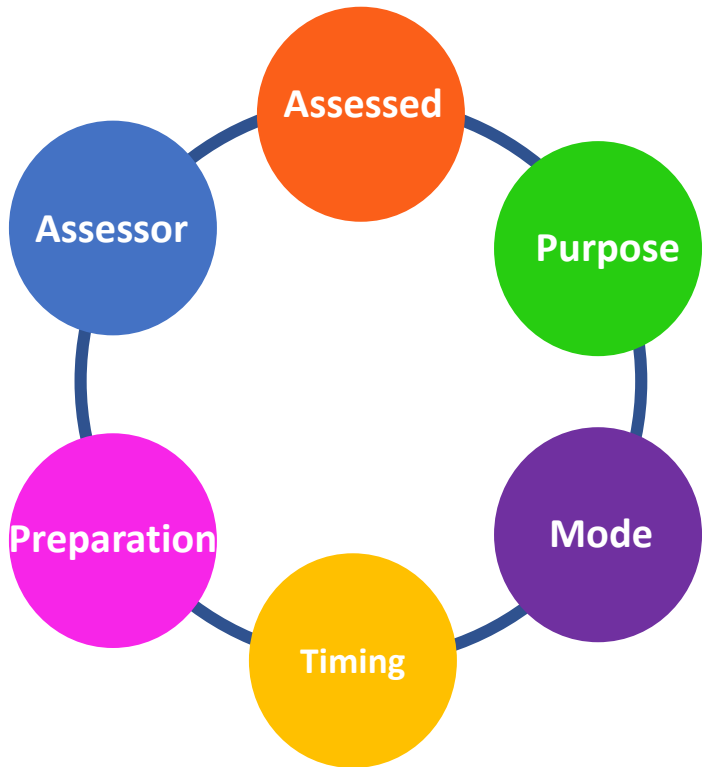


I would sort these FA Techniques by _____.



Formative Assessment Techniques
are comprised of
a constellation of factors.

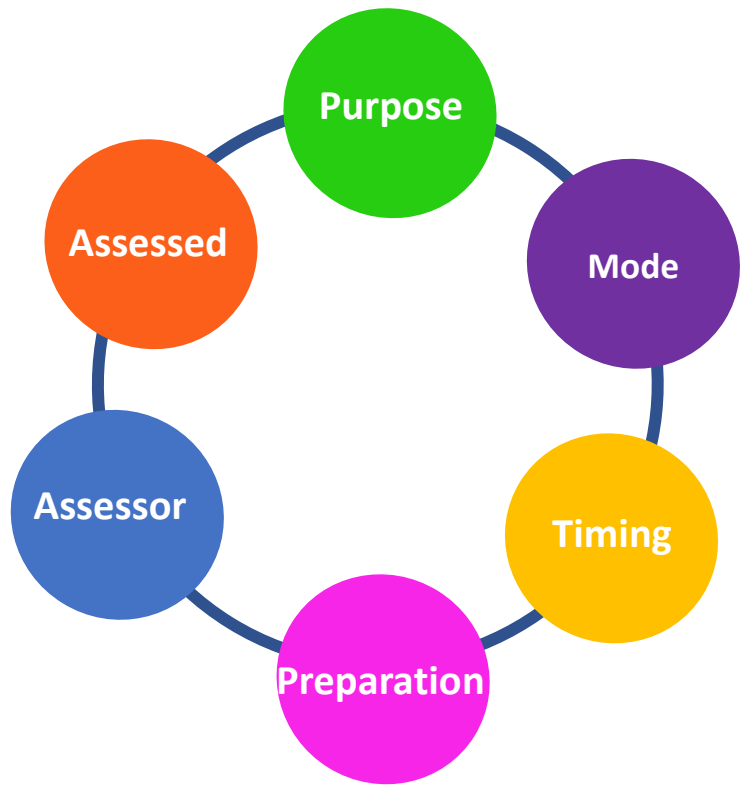




Purpose

What is my intended learning outcome? What do I want to know about current student learning?

Progress
Affect
Cognition



Mode

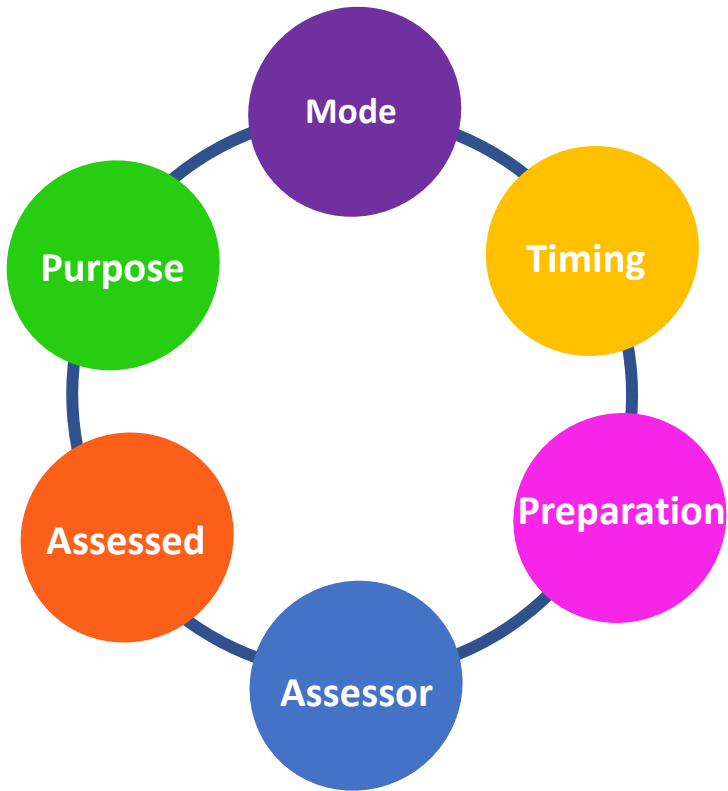
How will I assess?

Written

Oral

Visual (Non-Linguistic)

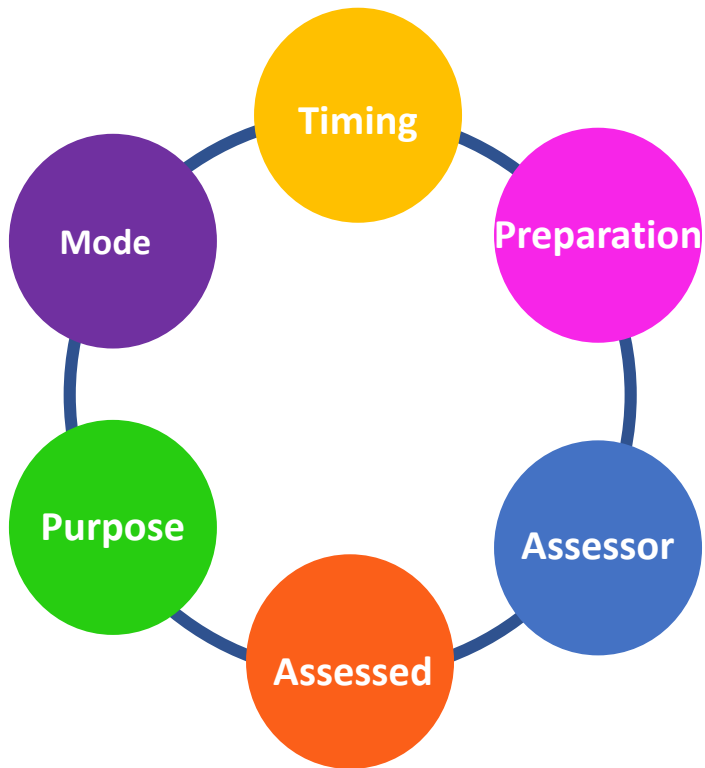
Kinesthetic



Timing

Where are we in the teaching/
learning process?

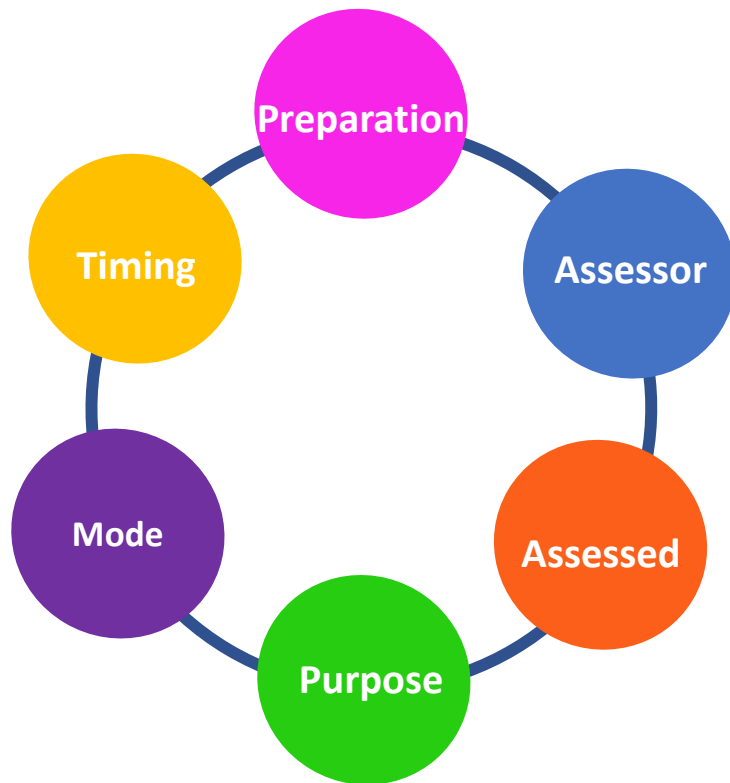
Before Instruction
During Instruction
After Instruction



Preparation

What will I need? What do I have?

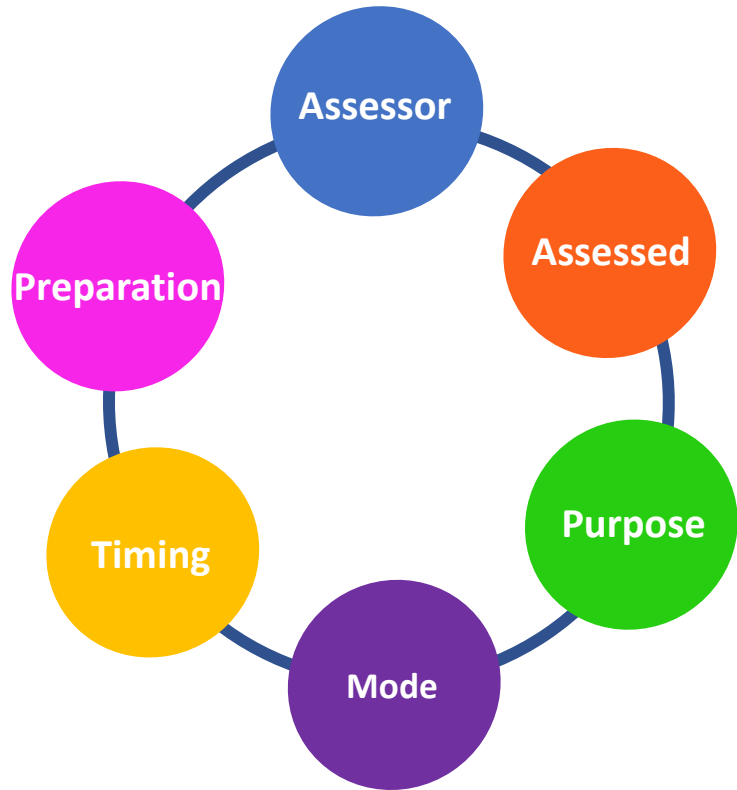
Nothing
Space
Supplies
Technology
Time



Assessor

Who will do the assessing?

Student
Peer
Teacher



Assessed

Who will be assessed?

Individual students

Partners

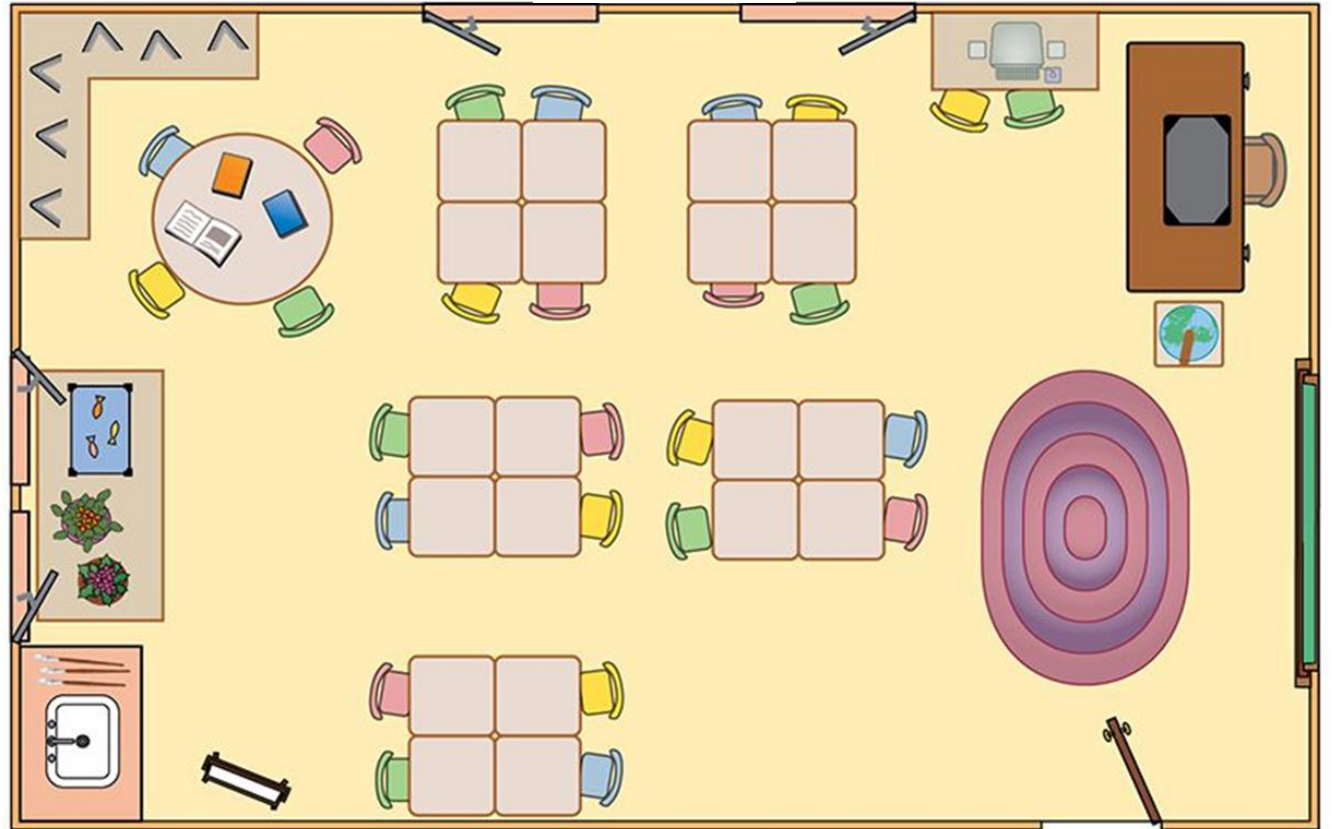
Small groups

The whole class

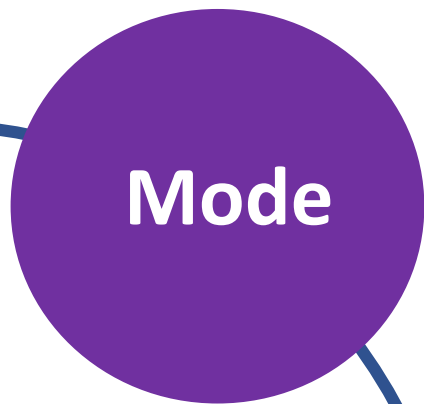
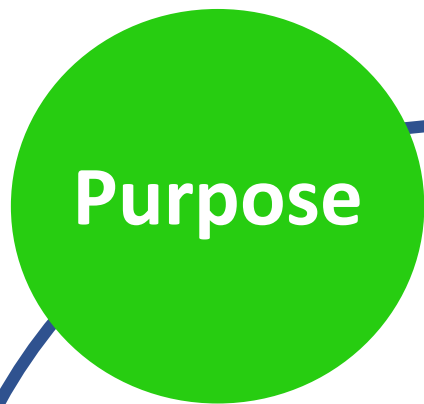
Four Corners

Definition:

Students respond to statements/questions by moving to parts of the room labeled agree, disagree, unsure, and abstain. The teacher elicits explanations, discussion, debate, etc. regarding their responses.



Four Corners



Cognitive &
Affective

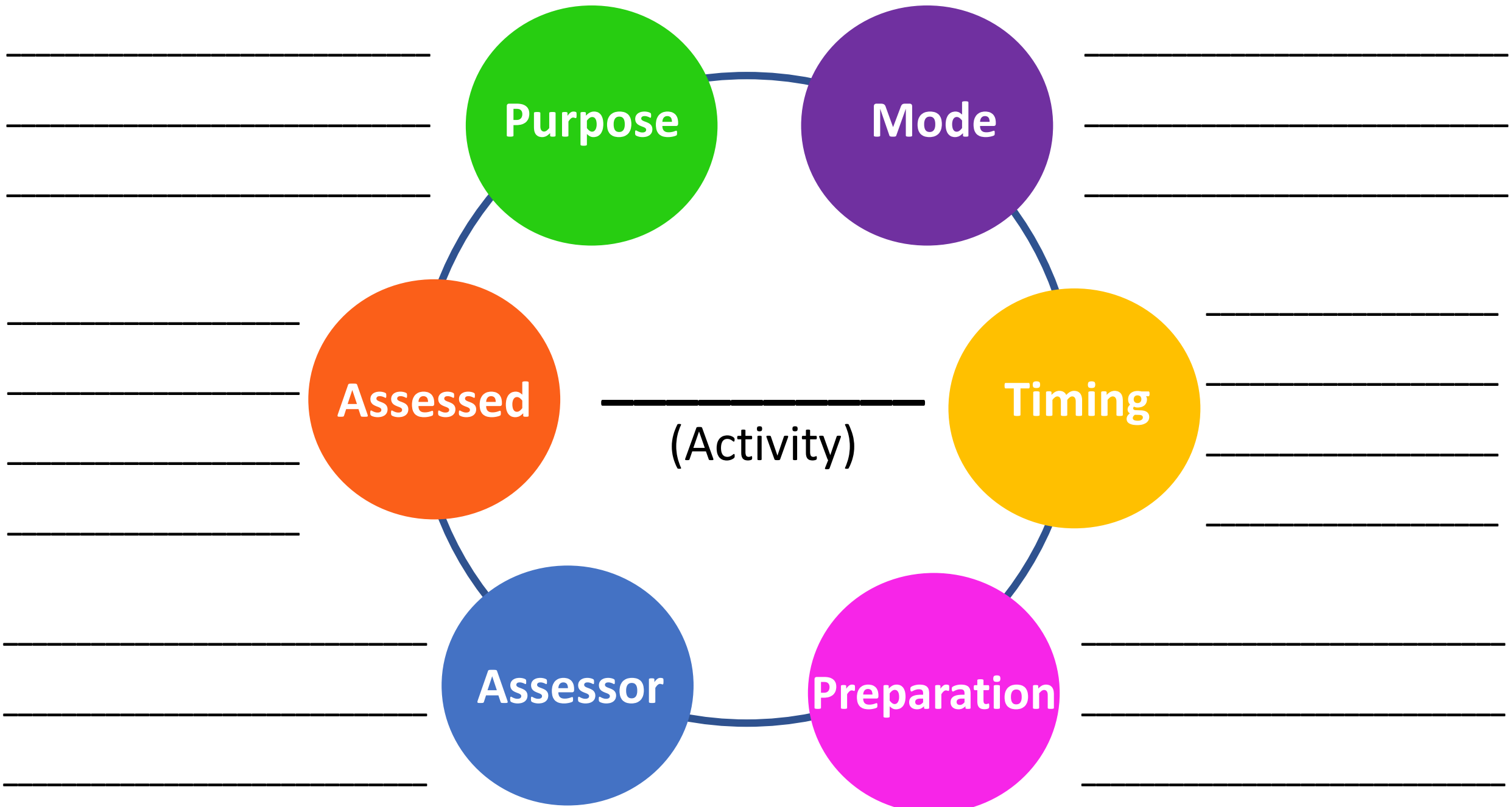
Kinesthetic & Oral

Whole Class
& Individual

Before,
During, After
Instruction

Teacher & Peers

Create statements
ahead of time.



Purpose

Mode

Assessed

Timing

Assessor

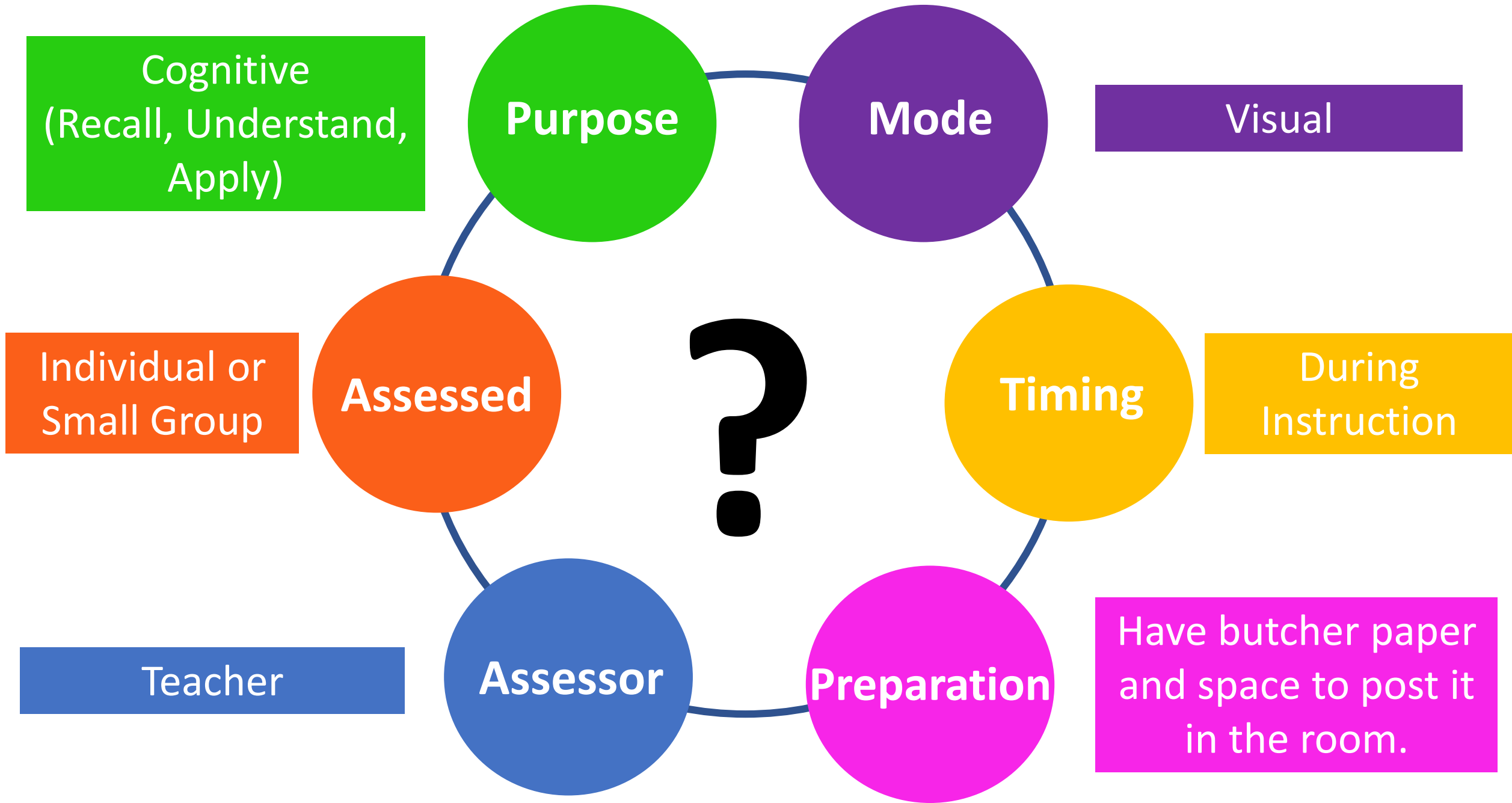
Preparation

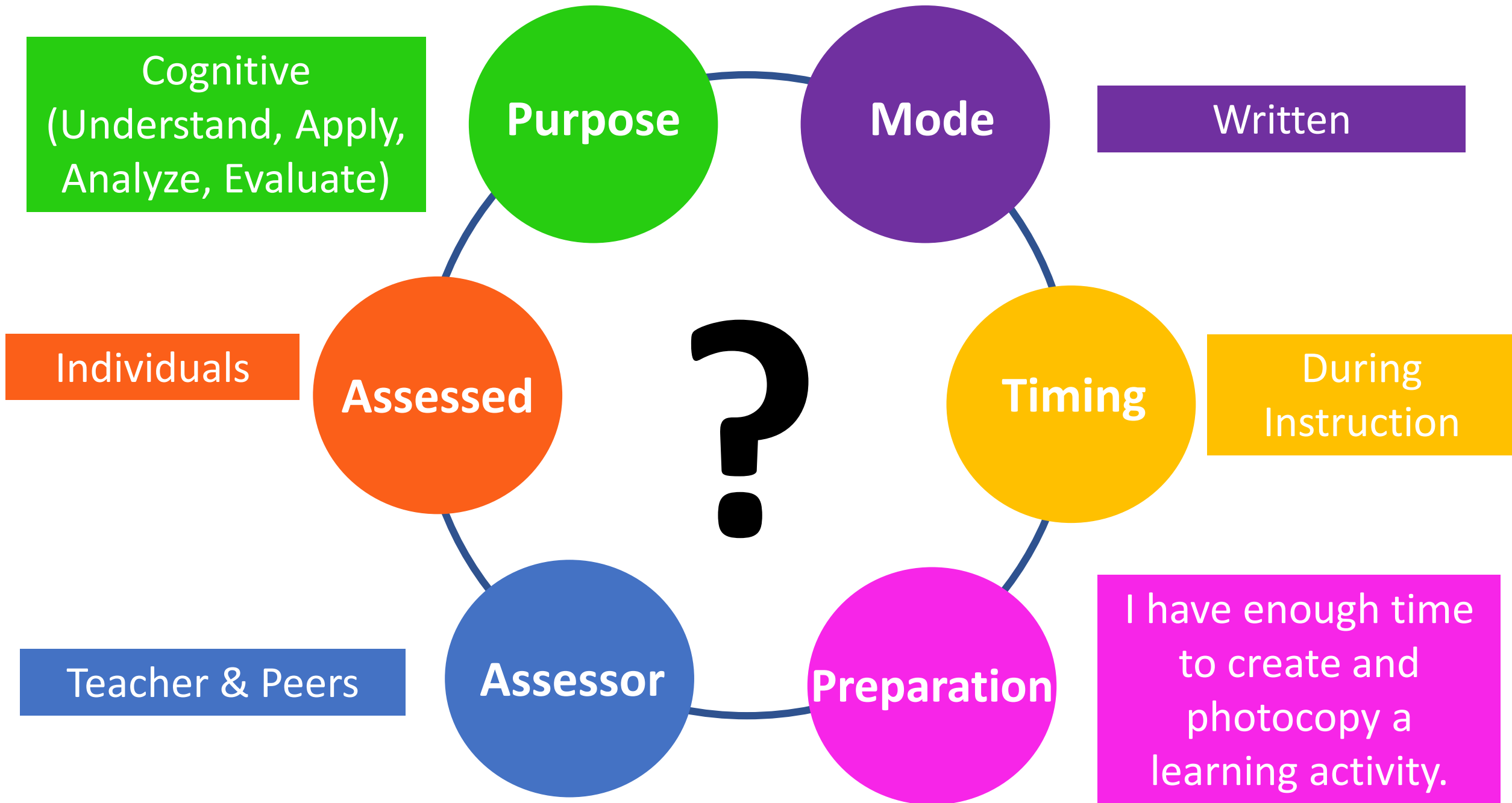
(Activity)



FA







Cognitive
(Understand, Apply,
Analyze, Evaluate)

Purpose

Mode

Written

Individuals

Assessed

Timing

During
Instruction

?

Teacher & Peers

Assessor

Preparation

I have enough time
to create and
photocopy a
learning activity.

Odd One Out

Definition:

Given a set of multiple options, students select the one that is different from the others and offer an explanation for their choice.

Name the **Algebra** topic, then spot the **ODD ONE OUT!**

A

$$(x+1)(x+2)$$

B

$$(2x+3)(x+5)$$

C

$$(x-4)(x+4)$$

D

$$(x-5)(x+6)$$

Topic	
Odd one out(s)	
Reasons	

EXTENSION: Using the same topic create 4 new questions with a different odd one out.



Design a Formative Assessment Technique







Rapid Teams

Question 1:

Share one thing you've learned or one thing that's surprised you this morning.

Question 2:

Share one thing you have questions about.



TIME FOR A BREAK

Rock, Paper, Scissors

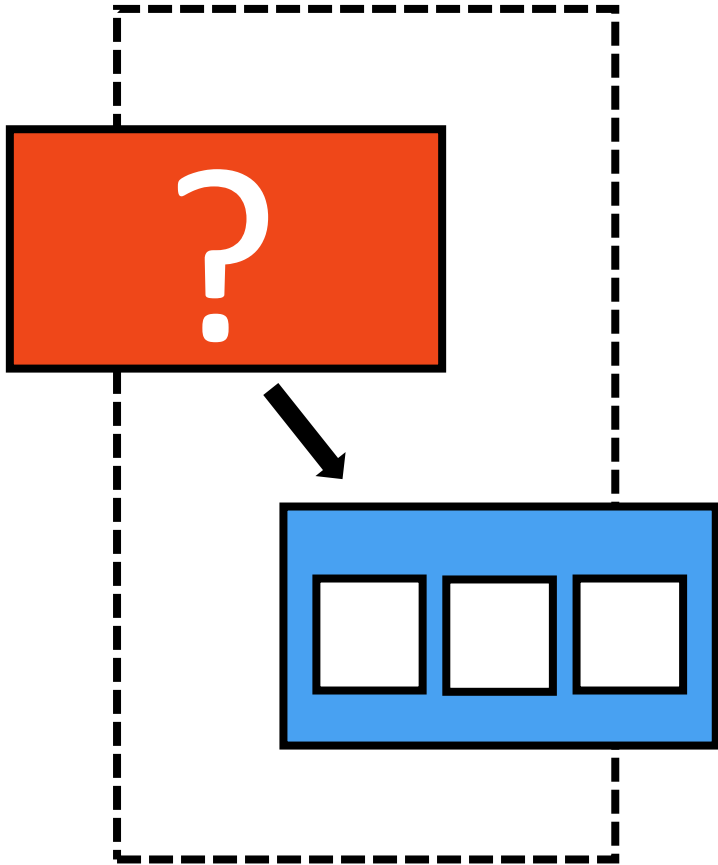




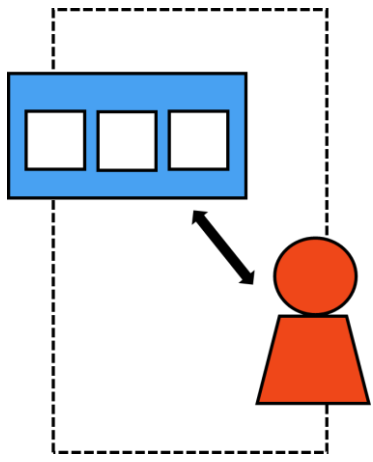
FA Techniques from this morning?

Intentional Process

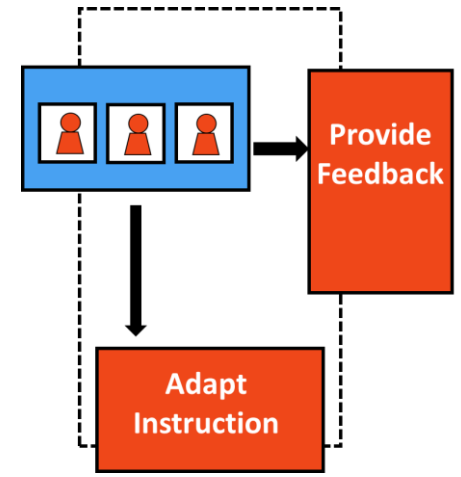
Elicit & Capture



Analyze & Infer



Communicate & Use



On the Fly

On the Fly

On the Fly

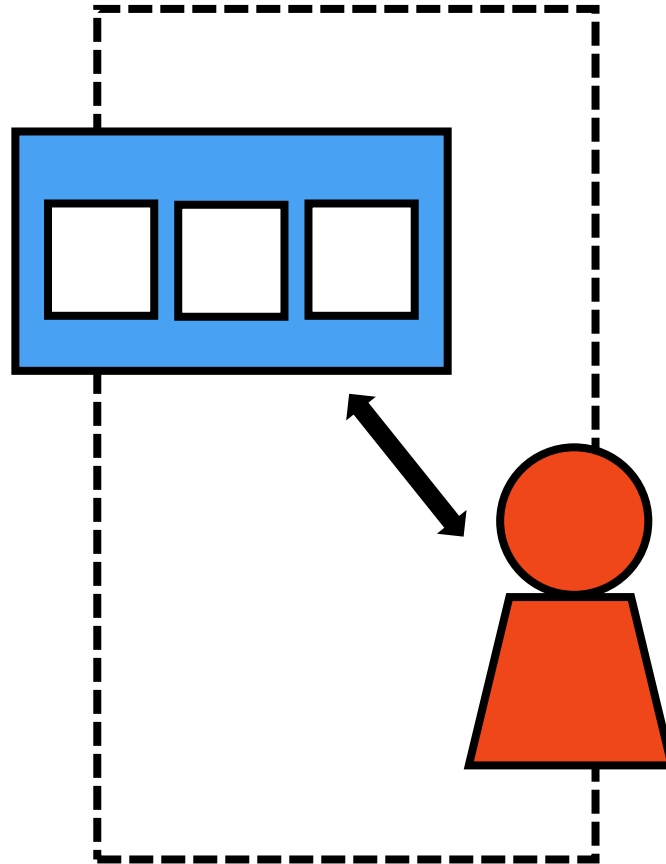
After the Fact

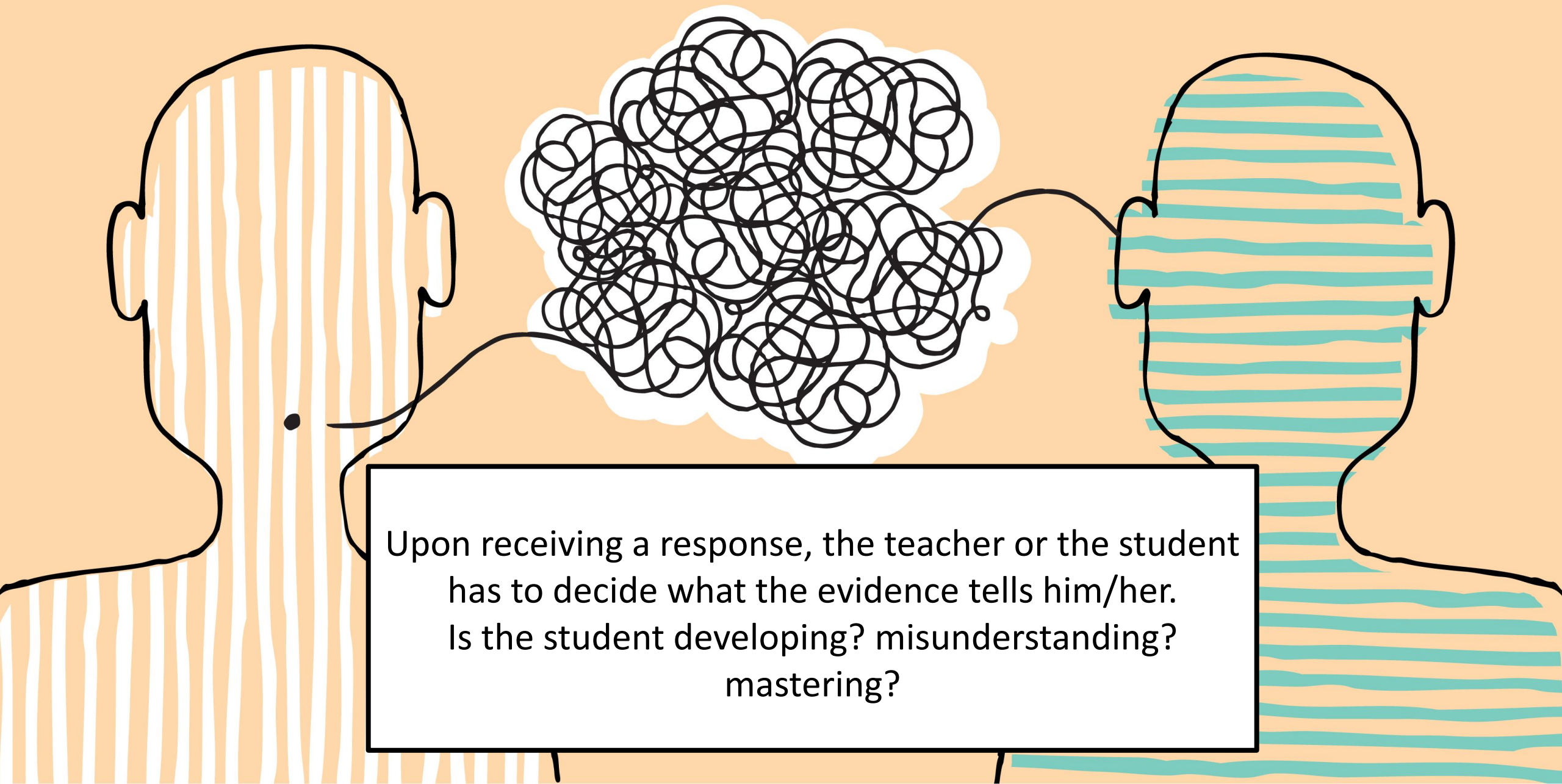
After the Fact

After the Fact

Intentional Process

Analyze & Infer





Upon receiving a response, the teacher or the student has to decide what the evidence tells him/her. Is the student developing? misunderstanding? mastering?

Does

...it is said that various public and government are elaborated.
You will notice that the perfect education officials to appoint are those that are most unambiguously opposed to life tenure in any office. He is not the job of all private monopolies and officials have a more or less dangerous than blaming anyone for you, you are not to fight with logic on merely saving budget with which you will have to deal. Remember you of my high school and of my best

=

Learning Targets 

?



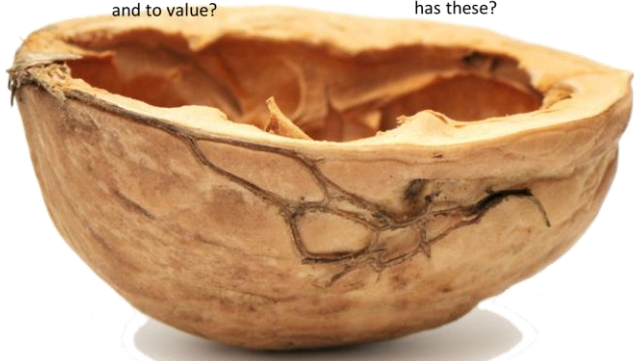
C

=

A

What do we *intend* for students to know, to be able to do, and to value?

What *evidence* would dependably convince us that each student has these?



Look for Misconceptions

- Has the student misunderstood...
 - the prompt or task?
 - the concept?
 - the criteria for quality?
- Has the student used an inappropriate or ineffective strategy?
- Has the student given a relevant answer but needs to explain better?



Look for Patterns



Do responses follow a pattern?

OR

Is there no discernible pattern to responses?

Look for Outliers

Is the outlier
response “way
out there” good?

OR

Is the outlier
response “way
out there” bad?



What will you be looking for evidence of?



- Accuracy
- Depth
- Clarity
- Precision
- Breadth
- Logic
- Significance
- Fairness
- Relevance
- Level of Assistance
- Frequency
- Duration
- Degree
- Interest
- Preference
- Progress

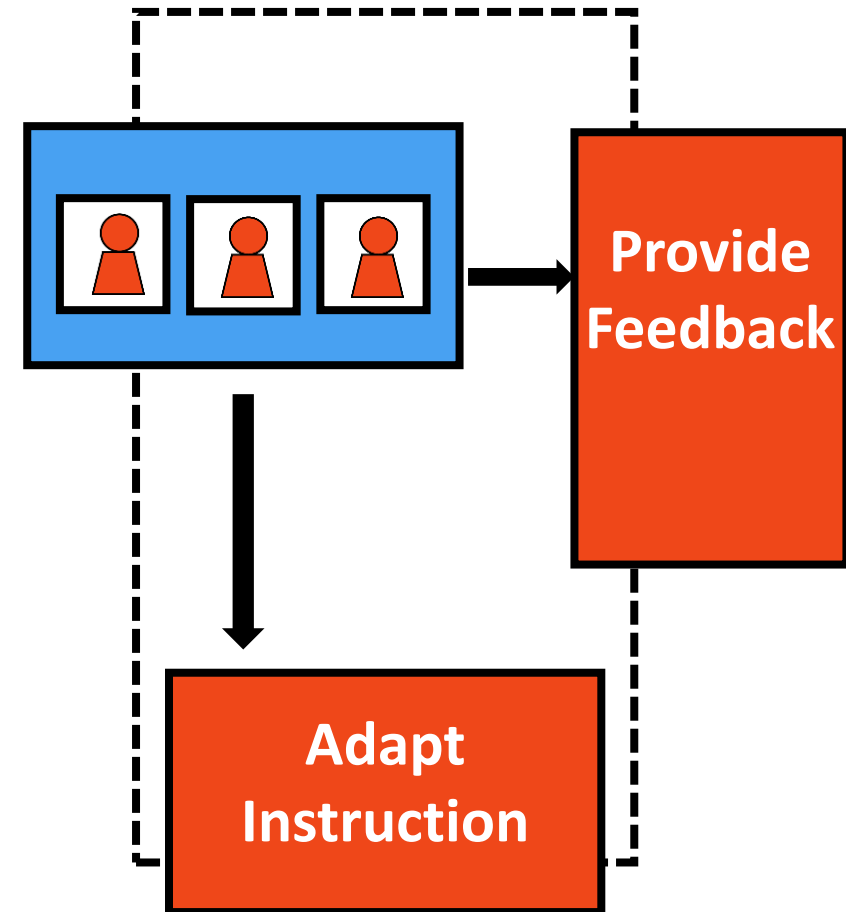
Adapted from Elder & Paul, 2002,
"Universal Intellectual Standards," Foundation for Critical Thinking

CAUTION

**Interpretations
must be accurate.**

Intentional Process

Communicate & Use



Characteristics of Good Feedback

constructive

honest

accurate

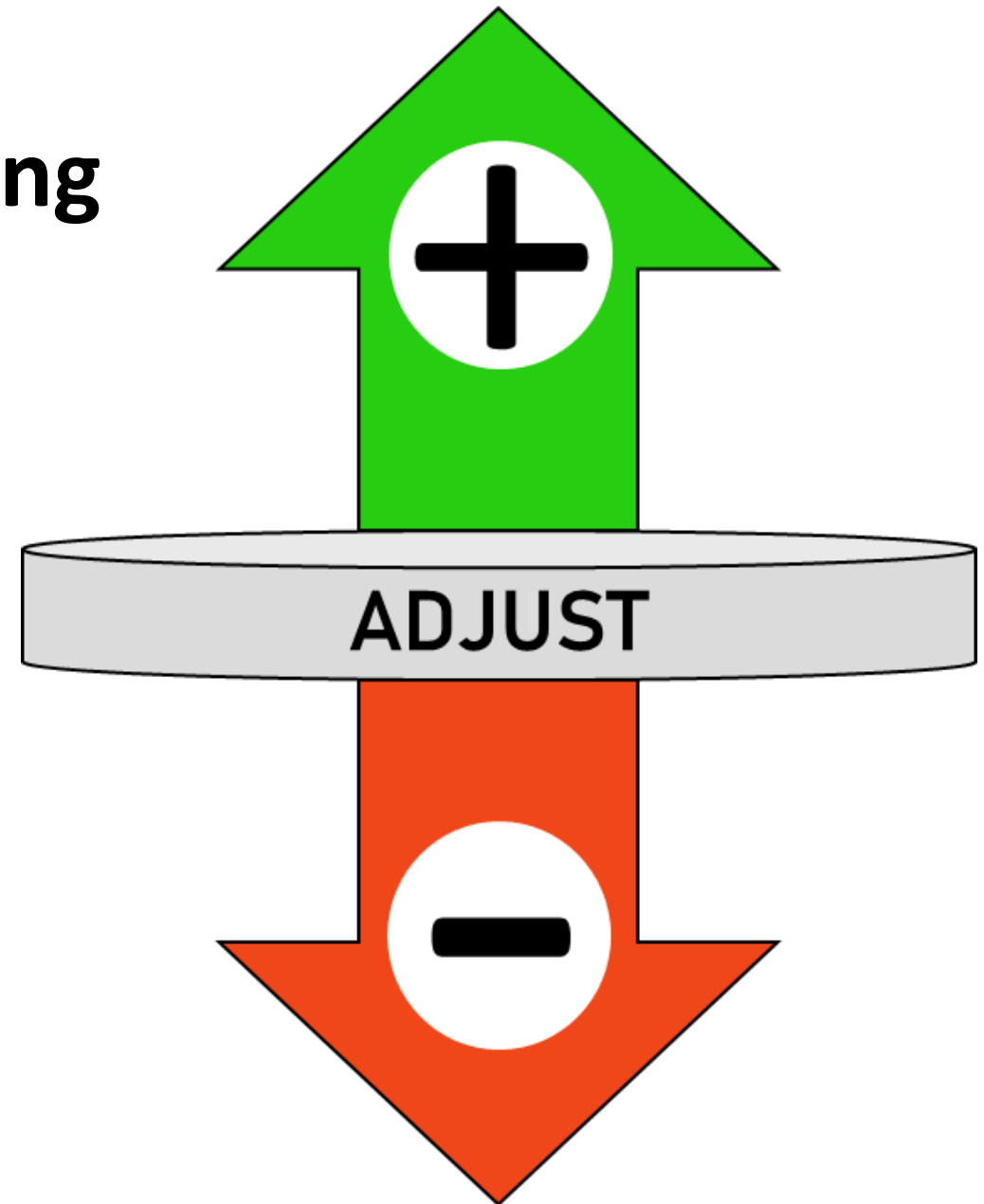
specific

timely

feedback

Informed Instructional Decision Making

- Review?
- Increase cognitive demand?
- Introduce new content/skills?



Correct Moral Clear Explanation	Correct Moral Vague Explanation	Incorrect Moral Clear Explanation	Incorrect Moral Vague Explanation
Students 2, 5, 6	Students 1, 3, 8, 9, 11, 13, 14, 15	Students 4, 7	Students 10, 12

Student 1	Student 2	Student 3	Student 4
✓	✓	✓ +	✓
Student 5	Student 6	Student 7	Student 8
X	✓ -	✓	✓
Student 9	Student 10	Student 11	Student 12
✓	✓ +	✓	X
Student 13	Student 14	Student 15	Student 16
✓ +	✓	X	✓
Student 17	Student 18	Student 19	Student 20
✓	✓	✓ +	✓ +

KEY:

- ✓ + complete and accurate
- ✓ Incomplete and accurate
- ✓ - incomplete and inaccurate
- X missing

Comma Problems

Needs Work: Student 3, 5, 6, 8, 9, 11, 12, 14, 15, 16
(8 of these were because of compound sentences!)

Excellent: Student 10

Embedding Citations

Needs Work: Students 2, 3, 4, 5, 6, 8, 10, 11, 12, 14, 15, 16
(8, 12, & 14 didn't do it at all; the others were clunky)

Excellent: Students 1, 7, 9, 13

Use of Specific Examples

Needs Work: Students 4, 5

Excellent: Students 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

Formative Assessment Planning Template

What will students know and be able to do?	What evidence are you willing to accept that students have learned?		
Knowledge, Skills, & Dispositions	Elicit & Capture (make student thinking visible)	Analyze & Infer (make sense of what you “see”)	Communicate & Use (progress student learning)
Intended Learning Outcomes	Technique Purpose: Mode: Timing: Preparation: Assessor: Assessed:	Teacher (on the fly & after the fact) Student(s)	Feedback (on the fly & after the fact) Instructional Decision Making (on the fly & after the fact)



observations



insights



challenges



suggestions

[PollEv.com/sarahhylton261](https://www.poll-ev.com/sarahhylton261)



TIME FOR A BREAK

Case Study

Ms. Arraza's geometry class has been learning about the properties of triangles so they can use those properties in their proofs. On Tuesday, Ms. Arraza modeled her thinking about triangles and how to use their properties (such as exterior angles and remote interior angles) to solve problems. Students then engaged in group work to practice applying this information. At the end of class, they completed exit slips on which...



Next Steps for Me



one

o word