

# Status of the Class Checks or CATS (Classroom Assessment Techniques)

Quick assessments for learning what the students know and where they are in their learning process.

## Windshield Checks



### Windshield Check



“Twists” on the Windshield Check

- CLEAR – “I get it!”
- BUGS – “I get it for the most part, but I still have a few questions.”
- MUD – “I still don’t get it.”

- Thumbs up,  
Thumbs down,  
Thumbs sideways



- How many bars do you have (as in cell phone signal)?



## Quartet Quiz

### Quartet Quiz (CAT – UVA – '98)

1. Teacher poses a question
2. Students write/prepare responses
3. Students meet in quads and check answers
4. “Summarizer” reports: “We know” and “We wonder” statements
5. Teacher takes notes/records on board
6. Class develops closure/clarification /summary statements



## Exit Cards

EASY STRATEGY FOR ASSESSING STUDENT UNDERSTANDING...



### EXIT CARDS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Exit Cards: Science

Name: \_\_\_\_\_

- Draw the earth's orbit around the sun.
- Briefly explain what causes the seasons. Use illustrations, if necessary.
- How have your opinions about this topic changed? What questions do you still have about"?

### Exit Cards: British Literature

Name: \_\_\_\_\_

- What is a "conceit"?
- Briefly explain the "conceit" apparent in "The Flea"
- In what other works that we've read did you notice a "conceit"?

### Exit Cards: History

Name: \_\_\_\_\_

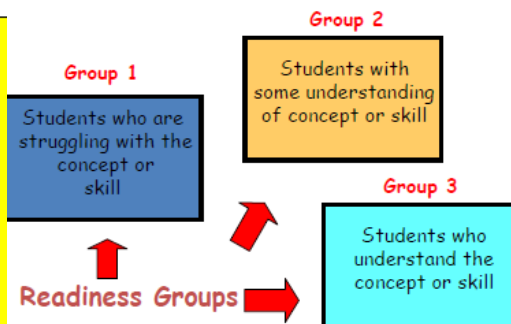
- Name 3 factors that contributed to the United States' involvement in WWII?
- Briefly explain what you believe to be the most significant of these factors and tell why?

### Math Exit Card

Name: \_\_\_\_\_

- Compute the following:  
 $(5 + 6) + 3 = 5 + (4 + \_? \_)$
- Compute the following:  
 $1/2 - 1/6 = ?$
- Rewrite the following into exponential form:  
 $3 \times 3 \times 3 \times 3 \times 3 = 3^?$

### EXIT CARD GROUPINGS



## **One Minute Papers**

The procedure is simple: give students a few minutes of class to write the answer(s) to one or two specific questions you choose to ask them; collect the answers and synthesize them in any way you like; respond in some way during the following class period. One minute papers are usually given at the end of class, but they are useful at any time depending on what information the teacher needs.

Sample questions

### **Interest:**

- \*Without looking at your notes, what was most memorable or stands out in your mind about today's class?
- \*What was the most surprising and/or unexpected idea expressed in today's discussion?
- \*Looking back at your notes, what would you say was the most stimulating idea discussed in today's class?
- \*For you, what interesting questions remain unanswered about today's topic?

### **Relevance:**

- \*In your opinion, what was the most useful idea discussed in today's class?
- \*During today's class, what idea(s) struck you as things you could or should put into practice?
- \*What example or illustration cited in today's class could you relate to the most?

### **Attitudes/Opinions:**

- \*Would you agree or disagree with this statement: . . . ? Why?
- \*What was the most persuasive or convincing argument (or counterargument) that you heard expressed in today's discussion?
- \*Was there a position taken in today's class that you strongly disagreed with, or found to be disturbing and unsettling?
- \*What idea expressed in today's class strongly affected or influenced your personal opinions, viewpoints, or values?

### **Analysis:**

- \*What did you perceive to be the major purpose or objective of today's class?
- \*What do you think was the most important point or central concept communicated during today's presentation?

### **Conceptual Connections:**

- \*What relationship did you see between today's topic and other topics previously covered in this course?
- \*What was discussed in class today that seemed to connect with what you are learning or have learned in other course(s)?

### **General**

- \*What was the most important (significant, crucial) thing you learned in today's class?
- \*What question(s) do you have about the material covered in today's class?
- \* What was the muddiest point in today's lecture?
- \*How can I help you learn the concept that is giving you the most trouble?
- \*Write two quiz questions about the material covered today.
- \*List the key concepts from today's class.
- \* What question did I ask students today that helped you the most? The least?
- \* What examples did I use today that helped you the most? The least?
- \* What is the main application of the material we discussed today?

### **One Sentence Summary**

This simple technique challenges students to answer the questions "Who does what to whom, when, where, how, and why?" (represented by the letters WDWWWWHW) about a given topic, and then to synthesize those answers into a simple informative, grammatical, and long summary sentence.

Step-by-Step Procedure:

1. Select an important topic or work that your students have recently studied in your course and that you expect them to learn to summarize.
2. Working as quickly as you can, answer the questions "Who Did/Does What to Whom, When, Where, How and Why?" in relation to that topic. Note how long this first step takes you.
3. Next, turn your answers into a grammatical sentence that follows WDWWWWHS pattern. Note how long this second step takes.

Allow your students up to twice as much time as it took you to carry out the task and give them clear direction on the One-Sentence Summary technique before you announce the topic to be summarized.

### **One Sentence Synthesis**

This is similar to the minute paper but requires a higher level thinking skill. Ask the students at the end of a class to synthesize the content of the lecture or discussion into one sentence.

### **Muddiest Point**

The Muddiest Point is just about the simplest technique one can use. It is also remarkable efficient, since it provides a high information return for a very low investment of time and energy. The technique consists of asking students to jot down a quick response to one question: "What was the muddiest point in .....?" The focus of the Muddiest Point assessment might be a lecture, a discussion, a homework assignment, a play, or a film. Step-by-Step Procedure:

1. Determine what you want feedback on: the entire class session or one self-contained segment? A lecture, a discussion, a presentation?
2. If you are using the technique in class, reserve a few minutes at the end of the class session. Leave enough time to ask the question, to allow students to respond, and to collect their responses by the usual ending time.
3. Let students know beforehand how much time they will have to respond and what use you will make of their responses.
4. Pass out slips of paper or index cards for students to write on.
5. Collect the responses as or before students leave. Stationing yourself at the door and collecting "muddy points" as students file out is one way; leaving a "muddy point" collection box by the exit is another.

Respond to the students' feedback during the next class meeting or as soon as possible afterward.

### **Focused Listing**

Similar to the minute paper but using a listing format. Ask students to list 2, 3, 4, things they learned more about in a given session.

### **Empty Outlines**

Handouts with only key points for a lesson listed in outline form. Leave space for students to fill in details. These can be turned in for assessment purposes, or students can share them with each other to be sure each is on the correct wavelength.

### **Class Starter Questions**

For this to work successfully, it needs to be a standing assignment for each student to bring in a 3x5 card with a question already formulated as his/her admit to class. The teacher can quickly sort the cards and begin class by addressing key issues. This gives the instructor a good idea of what learning has transpired prior to the class and what still needs to be addressed.

### **Guided Reading Questions**

Questions prepared by the instructor in advance of a reading assignment. Questions are designed to lead students to the most important information, not like a quiz. This will lead to better class discussion; especially good for literature classes.

### **Progressive Quiz**

A one-two question quiz on reading assignments given at the beginning of each class period. The instructor takes up the papers after the first quiz; returns them for the next one, etc. All questions/responses are kept on the same sheet(s) of paper. The aggregate score could be used as a test grade at the end of the semester.

### **Categorizing Grids**

This is an assessment of students' ability to sort items into categories. Students are presented with a grid containing two or three important categories and a scrambled list of subordinate terms, images, equations, definitions or other items that belong in one or the other of the categories. Then they are given a limited time to place the items in the appropriate grid. Avoid trivial or ambiguous relationships, which tend to backfire by focusing students on superficial kinds of learning. The grids can be used as homework or to generate group-based online or in-class discussions.

### **Example of Categorizing Grid**

*Sample provided courtesy of [Robert Mitchell](#) (Biology).*

<b>Divisions of Aorta</b>	<b>Primary Branches</b>	<b>Subdivisions</b>	<b>Region or organ supplies</b>
Ascending aorta			

Arch of the aorta			
Thoracic aorta			
Abdominal aorta			

### Defining Features Matrix

This matrix requires students to categorize concepts according to the presence (+) or absence (-) of important defining features. This can be used for such subjects as literary or historical time periods; the differences among theories, thinkers, processes, etc.

#### Example: Metamorphic Rocks Defining Features Matrix

Complete the table below by placing a check mark in the one or both of the two columns of the table where appropriate. Identify which of the characteristics in the left hand column are present in rocks formed by contact and/or regional metamorphism. **Do not** place a check mark in either column if the characteristic is not present. One characteristic has been completed as an example.

Characteristic	Rocks formed by . . .	
	contact metamorphism	regional metamorphism
Formed at temperatures above 200 C	+	+
May originally have been an igneous rock	+	+
Form as a result of increasing pressures	-	+
May surround plutonic igneous rocks	+	-
Slate is an example	-	+
Form as a result of melting	-	-

#### How to use a Defining Features Matrix

- 1. Identify two concepts that have several similarities.** Students can readily confuse the characteristics of key features or concepts that exhibit some similarities (e.g., hurricanes vs. tornadoes, Lincoln vs. Douglas, Picasso vs. Matisse).
- 2. List the important characteristics of the two concepts .** These may include characteristics that are similar in both cases or different (or even absent in both cases).
- 3. Generate a matrix.** The simplest matrix has two open columns on the right side that can be used by students to place a + (feature is present) or – (feature is absent) and a wider left-hand column with concept characteristics.

Source:

Angelo, T.A., and Cross, K.P., 1993, Classroom Assessment Techniques: A Handbook for College Teachers, 2nd edition, Josey Bass.

### **Invented Dialogs**

This is a role playing activity that allows instructors to assess how well students have learned facts, ideas and concepts. Have individuals or small groups assume roles and create dialogs to illustrate their knowledge.

### **Application Cards**

This is a grown-up version of the flash cards we used to learn multiplication facts or definitions of words. The concept/theory key word goes on one side; the application on the other. Can be used for review in small groups or for an entire class.

### **Approximate Analogies**

The instructor supplies the first half of an "A is to B as X is to \_\_\_" analogy, and the students complete it. Analogies are "approximate" because they need not meet the demands of formal logic.

### **Word Journal**

Students first summarize a text with a single word and then write a paragraph or two explaining why they chose that word.

### **Chain Notes**

No, this is not the same as a chain letter. It is a way to assess what students are focusing on or learning or questioning during a class session. Give students a 3x5 card when they come into class. Then, sometime later in the class period, start a large envelope around the room in which each student drops his or her card with whatever response you have asked for.

### **Analytic Memos**

A simulation exercise that requires students to write a one-page analysis of a problem or issue. They are to write the memo to a fictitious person embodying a specific role (e.g., employer, client).

### **Electronic Mail Feedback**

If you have class list serves, you can address assessment questions through e-mail. These should be fairly innocuous since they obviously cannot be anonymous in their responses.

### **Focused Listening**

Focuses students' attention on a single term, name, or concept and requires them to list several ideas closely related to that focus.

### Human Graph

This is a strategy is a physical process to gain an understanding of the scope of the individual and group knowledge. This strategy is allows the facilitator/teacher to quickly gain an overview of the current level of knowledge of individuals and the group. It also allows individuals to think about and evaluate their level of knowledge. It can also be used to show learning growth when used throughout the learning process.

1. Ask the students/participants to think about their level of knowledge and understanding of a particular topic.
2. Ask the students/participants to stand in a line that represents a continuum of knowledge 1 to 100. 1 being very little or no knowledge of the topic and 100 being expert.
3. Teacher and students/participants can then gain a visual representation of current knowledge and understanding.
4. Learning activities can then be pitched according to the knowledge e.g. whole group learning, small group learning, and individual learning.

Ideas from here

- Participants can be paired form either end of the continuum to form cooperative learning groups so that at least one member of the group has some knowledge.
- Mixed groups can be formed and activities can be facilitated that continues to build on the group knowledge
- Group knowledge can then be display and circulated so that all students/participants have access to this foundation level of information.
- The process can be used again through the learning situation and again at the end to assess the knowledge growth.

### Pro and Con Grids

This simple exercise can give an instructor a quick overview of a class's analysis of the pros and cons, advantages/disadvantages etc. of an issue of concern. Requires students to jot down quick lists of pros and cons regarding the topic under discussion. Good for seeing both sides of an issue and for classes that don't necessarily deal in absolutes.

### Pros Cons Questions (PC?)

This is a reflective tool useful at the end of an activity, event or unit of work. Individually or in groups, students can reflect on a completed task and note points under the headings Pros, Cons and Questions. These can then be shared and discussed or turned in for formative assessment prior to the final assessment.

<b>PROS</b>	<b>CONS</b>	<b>QUESTIONS</b>



## **PMI**

This is a useful reflection tool used at the end of an activity/event/unit of work. The participant brainstorms the pluses, minuses and interesting ideas of a chosen topic or issue. Point out to the participants that one person's plus may be another person's minus. The interesting column often contains a list of questions for further research.

<b>Plus</b>	<b>Minus</b>	<b>Interesting</b>