



Construct good questions:

- Short questions and brief options
- Number all answers to match the keypads (A-I or 1 – 9)
- For a 45-minute presentation, you should use no more than 5 or 6 questions, depending on the type of presentation
- Space the questions out

Build in one or two minutes for presenting and polling and 2-3 for discussion.

Use questions to see what the audience knows before you teach it and then use a different form of the question after teaching the material to assess what they know after the teaching.

Anticipate possible responses and be prepared to discuss.

Uses for Clickers during a lecture:

- Explore pre-existing knowledge
- Activate learning (trigger discussion, identify important areas, generate need to know, ow)
- Check for or promote understanding and give feedback
- Practice solving problems
- Identify values, attitudes, and opinions
- Get feedback from learners

Developing ARS Questions using Bloom's Taxonomy	
Type of Question	Sample Questions
<u>Knowledge:</u> Requires cognitive function and memory of knowledge learned.	<ol style="list-style-type: none"> <li>1. Which of the following pathways represents the feedback for the hypothalamic-pituitary axis in the disease described?</li> <li>2. A patient develops Horner's syndrome and has symptoms of diaphoresis. Which tumor is most likely?</li> </ol>
<u>Comprehension:</u> Requires further understanding other than memorization.	<ol style="list-style-type: none"> <li>1. Which of the following historical factors is key to the diagnosis?</li> <li>2. The child in the above scenario is exhibiting behaviors consistent with which of the following diagnoses?</li> </ol>
<u>Application:</u> Require problem solving and use of prior information.	<ol style="list-style-type: none"> <li>1. The patient presents to the emergency room with acute onset of dizziness and loss of consciousness. Which is the most appropriate next step?</li> <li>2. Which of the following is the best dose for this 10 month old infant weighing 10 kilograms?</li> </ol>
<u>Analysis:</u> Encourage higher level of clinical reasoning or problem solving.	<ol style="list-style-type: none"> <li>1. If your patient has fruity order to his breath, which of the following results of the laboratory tests would you expect to see?</li> <li>2. Which of the following statements describes why the diagnosis is not pseudotumor cerebri?</li> </ol>
<u>Synthesis:</u> Promotes creativity, connection and construction of new ideas.	<ol style="list-style-type: none"> <li>1. Which of the following research methods would help to identify the cure to this cancer?</li> </ol>
<u>Evaluation:</u> Promotes decision-making, conclusions, opinions.	<ol style="list-style-type: none"> <li>1. Rate your agreement with the statement using the following scale.</li> <li>2. Review the sample progress note and rate the quality using the scale below.</li> </ol>
<u>Evaluation:</u> Promotes decision-making, conclusions, opinions.	<ol style="list-style-type: none"> <li>1. Rate your agreement with the statement using the following scale.</li> <li>2. Review the sample progress note and rate the quality using the scale below.</li> </ol>

**References:**

Robertson LJ. Twelve tips for using a computerized audience response system. *Medical Teacher*. 2000; 2(3): 237-239

University of New Mexico, School of Medicine. Teacher and Educational Development. A Division of Educational Development and Research. Integrating Advances in Technology and Education Using An Audience Response System (ARS) To Promote Interest and Enhance Learning  
[http://som.unm.edu/ume/ted/pdf/ed\\_sch/wgea\\_07\\_workbook.pdf](http://som.unm.edu/ume/ted/pdf/ed_sch/wgea_07_workbook.pdf)