Developing Quality Open Response and Multiple Choice Items for the Classroom

Office of Teaching & Learning

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KENTUCKY DEPARTMENT OF EDUCATION

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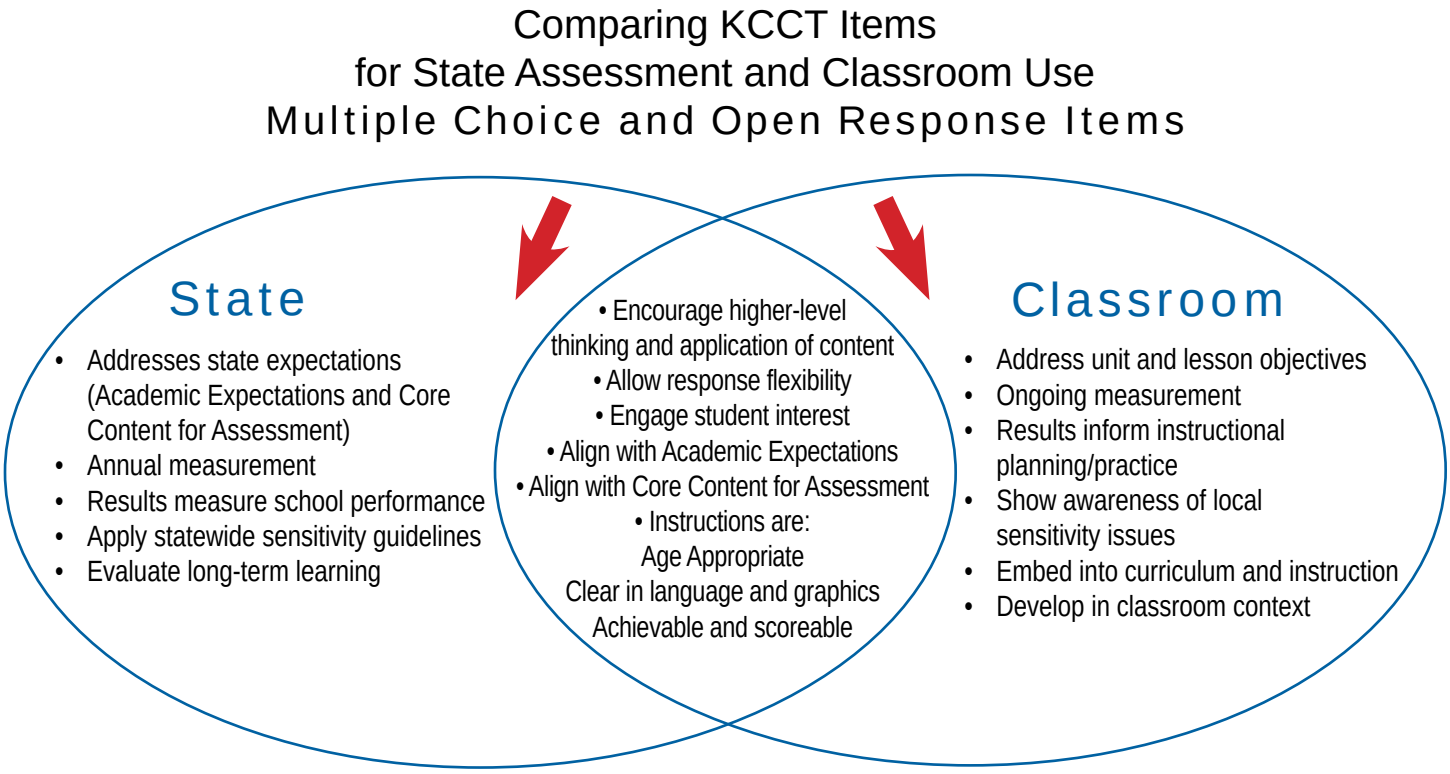
PLANNING GUIDE

INTRODUCTION

The purpose of this manual is to help you develop and incorporate questions like those on the Kentucky Core Content Test (KCCT) into your classroom instruction. The planning guide will take you through the basic steps of development. Throughout this manual you will find several links to sites with more information about the section you are reading.

The example questions included in this manual reflect attributes of KCCT-like items (Multiple Choice and Open Response Questions). While KCCT items are intended to assess only Core Content standards statewide, classroom assessments are meant to assess the learner goals in a particular Standards Based Unit of Study for a specific group of students. The graphic, **Comparing KCCT Items for State Assessment and Classroom Use**, represents both the similarities and the differences of these two different applications. Click **here** for a text-based version.



Open Response (OR) questions and Multiple Choice (MC) questions are not the only means of assessing student learning. It should not be assumed that this manual signifies that OR and MC are the only types of assessments to be used in the classroom. Teachers should allow for all types of assessment such as performance tasks, benchmark assessments, constructed response, etc. When designing a unit of study, teachers should consider multiple types of assessments for both formative and summative purposes. While multiple choice and open response items are certainly needed, and students should be exposed to them often, they should also be given the opportunity to demonstrate their learning in a variety of ways.

Table of Contents

A note about web links included in this document: Revisions to the structure of KDE's web site may possibly result in the disruption of some of the web links in this document. Should a link no longer work, please download the most recent version of this document or search by keyword for the appropriate linked document from the KDE web site.

Planning an Assessment

Open response and multiple choice questions should be included within the unit of study as assessments of the content and skills of that unit and not as isolated activities. Refer to: *The Big Picture: Curriculum, Instruction, Assessment* (**see Appendix A**).

Developing quality assessments is an important step in constructing an instructional unit, so this document should be considered as a companion piece to the **Unit of Study** manual. All questions should be authentic and directly related to the standards (e.g., Academic Expectations, Program of Studies, and Core Content for Assessment) addressed in the unit of study.

Academic Expectations
Program of Studies
Core Content for Assessment 4.1
Combined Curriculum Document

The Core Content for Assessment has Depth of Knowledge (DOK) levels attached to each standard. DOK measures the cognitive complexity of an individual item or standard. Kentucky's Core Content for Assessment contains DOK ceilings for the purpose of ensuring alignment between the standards and the items used to assess them.

The DOK levels indicated by the Core Content for Assessment set a ceiling, or upper limit for the cognitive complexity of questions included in the KCCT. While the questions on the KCCT must not exceed the DOK levels indicated by each individual standard, assessments written for the classroom are free to exceed this ceiling.

More information can be found about **DOK** in the support material in KDE's web page. Each content area has DOK charts and examples in their support materials.

Creating Student Learning Targets to Plan Assessments

While both OR and MC item can potentially be used to assess any standard, the decision as to which is most appropriate depends upon the specific learning target you wish to assess. Most content standards need to be 'deconstructed' into learning targets that specify what student learning and skill/ability should be demonstrated. For example, in the Combined Curriculum Document for Science at grade 4 (Structure and Transformation of Matter), one of the skills/concepts is:

> SC-4-STM-S-4
> Students will conduct tests, compare data and draw conclusions about physical properties of matter including states of matter, conduction and buoyancy

Obviously, a single item (either MC or OR) **could not** be constructed to effectively assess that entire statement. However by deconstructing, you can develop learning targets such as:

> Compare the physical properties of matter to make determinations about whether the material will sink or float;
>
> Draw conclusions about the physical properties of [some type of] matter after learning the most common uses of that type of matter, etc.

An individual OR or MC item **could** be constructed around each of those learning targets. The decision about which is most appropriate is influenced by several factors.

Considerations for choosing the appropriate question type (OR or MC):

What is an Open Response question?

An open response item is a question that requires students to both ***demonstrate content knowledge*** and to ***apply that knowledge in some way***. It is the ***application*** component of an open response question that distinguishes it from the more familiar essay or constructed response question. For all OR questions, content is the foundation of student answers. Students must demonstrate content knowledge in order to successfully support their answers to communicate clearly what they know and are able to do.

OR items often allow for more depth of knowledge to be demonstrated than in MC items. Students can be asked to demonstrate more complex cognitive behaviors such as comparing, relating, analyzing, inferring, concluding, predicting, generalizing, solving and/or applying.

Advantages of Open Response Items

- ❑ OR items allow for more depth of knowledge to be demonstrated than do MC items.
- ❑ OR items allow students to demonstrate more complex cognitive behaviors, such as comparing, relating, analyzing, inferring, concluding, predicting, generalizing, solving and/or applying.

Disadvantages of Open Response Items

- ❑ OR items are more difficult and more time consuming to score.
- ❑ Because of the time required to answer them, there must usually be fewer open response items on an assessment than MC items.
- ❑ Effectiveness of OR items is dependant on the scoring guide and answer information provided.

What is a Multiple Choice Question?

Multiple choice questions are considered 'selected response' items. Students are given three or more possible answers (4 on the KCCT) and are asked to choose the correct answer or the "best" answer. The item begins with an item stem, followed by response choices (the 'key' or correct answer and 'distractors'). MC questions can be used to measure knowledge recall as well as higher order thinking. They are appropriate for use with objectives that call for the students to do tasks such as recognize, distinguish between, select, estimate, infer, predict, relate, categorize, etc.

Advantages of Multiple Choice Items

- ❑ Can be used to measure a wide variety of learning outcomes.
- ❑ Permit wide sampling and broad coverage of a content domain.
- ❑ Are reliable and efficient to score.
- ❑ Can provide useful diagnostic information about the learning of individual students or groups of students.

Disadvantages of Multiple Choice Items

- ❑ MC items are difficult to write well.
- ❑ MC items cannot measure certain types of skills (e.g., the ability to organize and express ideas in writing; conduct a scientific investigation).
- ❑ Performance on MC items can be influenced by student characteristics unrelated to the subject of measurement, such as reading ability and "test-wiseness."

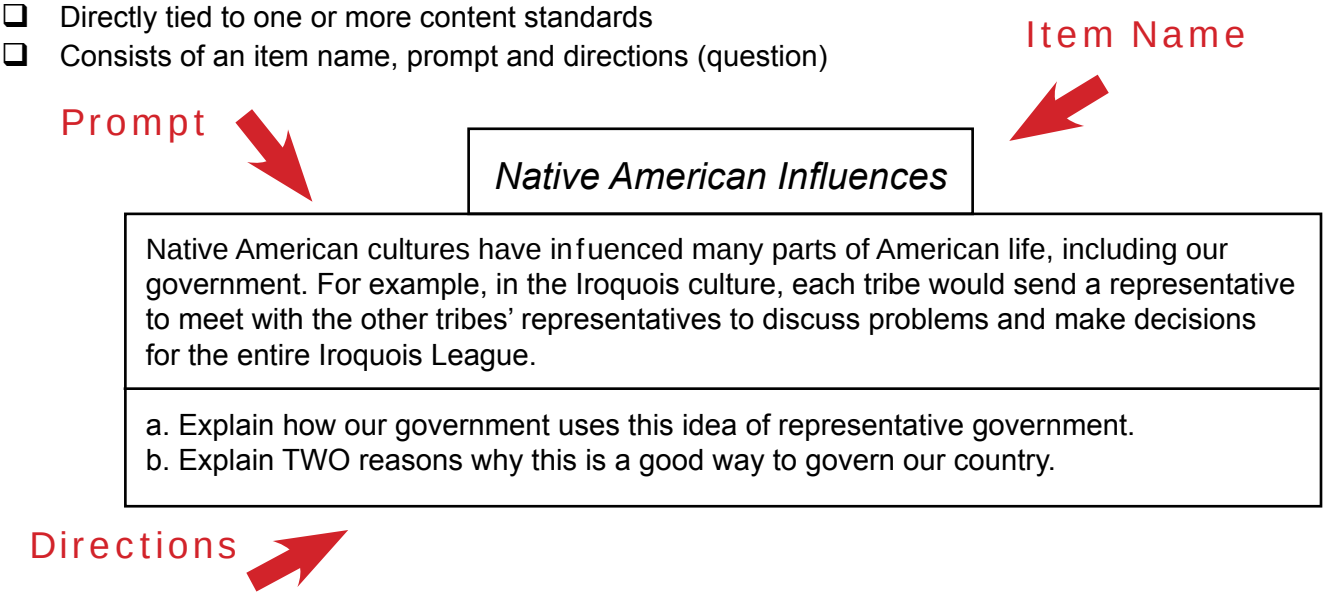
The chart in **Appendix B** illustrates the planning process when designing KCCT-like questions.

Writing an Open Response Question

While this document primarily addresses KCCT-like OR question development, it is also designed to help in the construction of assessment items for classroom use. Unlike items developed for the KCCT, items developed for classroom use are not limited to addressing Core Content for Assessment standards. Items intended for classroom use are free to address broader standards, such as the Program of Studies, national standards or local curriculum guides. In contrast, items that are developed for the KCCT ***must*** by definition be aligned to the Core Content for Assessment. For items based on Core Content, Depth of Knowledge (DOK) ceilings are not an absolute limit for local assessment. Unlike item developers for the KCCT, teachers are free to exceed the DOK ceilings for any Core Content for Assessment standard when developing items.

Characteristics of a KCCT-like open response:

- ❑ Directly tied to one or more content standards
- ❑ Consists of an item name, prompt and directions (question)



- ❑ Specifes exactly what a student is required to do in order to achieve the maximum score. *No extension is required beyond what the question specifies. See Common Misconceptions on page 14*.
- ❑ Requires a student to
  - demonstrate content knowledge;
  - apply that knowledge; and
  - communicate an answer in no more than a one-page written response.

Mathematics and science response pages are printed on graph paper. Other content area response sheets are printed on lined paper. Sample response books are available **here**

- ❑ Scored by the use of a question-specifc rubric on a 0-4 scale, but a general scoring guide is available to guide student responses. To download the general scoring guide click **here**

- ❑ **Written in one of five basic question formats**
- ❑ OR questions may:
  - have a correct answer which students can determine and explain through a variety of methods or in varying degrees of correctness;
  - have multiple successful answers for which students must apply their analytical skills to a response; or
  - combine requirements: one part requires a student to provide a single correct answer and a subsequent part asks the student to extend his/her knowledge in another way, such as applying the knowledge to another situation or by predicting an outcome.

In general, an OR differs from an essay or short answer question in that it requires some component of application. Below are some examples illustrating the difference between a KCCT-like question and other forms of constructed response questions. Click **here** to download the Word version.

Essay Question	Open Response Question
Assesses content knowledge only	Assesses content knowledge and application
List and describe the three steps of the water cycle.	John's class is studying the water cycle by observing a sealed jar of water on the windowsill. A. List and describe the three steps of the water cycle. B. Choose one of these steps and predict how John might see it occurring inside the jar.

NAEP extended-response	Open Response Question
Open-ended parameters: What exactly is meant by 'evaluate'?	Assesses content knowledge and application
UNION AND CONFEDERATE RESOURCES (as percentages of total United States resources) Resource / North / South Population 71% 29% Railroads 71% 29% Farm acreage 65% 35% Factory Workers 92% 8% Use the information in the table above to evaluate the statement, "The South could never have won the Civil War."	The Union and Confederate states had signifcant differences in the resources available to them during the Civil War. UNION AND CONFEDERATE RESOURCES (as percentages of total United States resources) Resource / North / South Population 71% 29% Railroads 71% 29% Farm acreage 65% 35% Factory Workers 92% 8% A. Choose two of the resources listed and describe why they were important. B. Explain what advantages an abundance of those resources would have provided during the Civil War.

The five basic Open Response question types:

1. Scaffolded questions

Scaffolded questions have multiple parts, with each question or direction the student is to address presented and labeled separately (e.g., A, B, C). The order is arranged so that successive questions depend upon the response to the previous question. Often, each part becomes increasingly more difficult or complex.

Scaffolded Question Example

The framers of the U.S. Constitution wanted to prevent the new federal government from becoming a dictatorship. To keep the government from becoming too powerful, they divided its powers among three branches.

A. For each of the three branches of government identify one power given to it by the Constitution.

B. Explain why each power you identified in part a is important to our system of government. Support your answer with real-life examples.

(Note: answering part b of this question requires that the student be able to list branches of government in part a.)

2. Single Dimension/Component questions

Single Dimension/Component forms ask a straight-forward question which requires explanation, examples, description or evidence as support.

Single Dimension/Component Example

Rivers provide several advantages to cities. Many Kentucky cities are located near large rivers.

Describe three important advantages that the rivers provide these cities. Explain why each advantage is important.

3. Two or More Relatively Independent Components questions

Two or More Relatively Independent Components are signaled by A, B, C parts. The parts may be about the same prompt but have little relation to each other in that a correct response to one question is not dependent upon the response to the other questions.

Two or More Relatively Independent Components Example

Fossils provide important clues about things that have lived in the past.

A. Describe two ways that fossils can form.

B. Explain one way that fossils can help us understand how livings things have changed over time.

(Note: answering part b of this question does not require the student be able to successfully answer part a. he reverse is also true.)

4. Student Choice: Topics/Options Provided questions

Student Choice with provided topics or options that force students to choose from the selections. They offer students more opportunities to demonstrate their individual learning, but may provide more scoring difficulty because there are many more "correct" answers.

Student Choice Example

Some of Earth's materials are listed below

soil water gases of the atmosphere rocks

A. Choose TWO materials from the list. Explain how a PLANT uses each of these materials to live.

B. Choose TWO materials from the list. Explain how an ANIMAL uses each of these materials to live.

5. Response to Provided Information questions

Students must be able to manipulate raw materials such as data, readings or graphics in order to respond to specific questions. This question type is combined with another type of question. In the example below, the student is responding to a text passage, but the question is scaffolded as well.

Response to Provided Information Example

Note: the student was required to read a text passage before completing this question

In the story "First Light," Matthew woke up in another time period, the 1850s.

A. Describe FOUR things Matthew discovered that were different from what he was used to in his present life.

B. Explain how EACH of those differences affected him. Use information from the story to support your answer.

Steps in constructing an Open Response question:

1. **Decide** which Program of Studies, Core Content or other standard(s) you wish to assess.
2. **Identify** the major concept(s) within these standards you want to assess. Most content standards are too complex to be completely assessed with a single question, so it is important to identify the specific learning target(s) within the standard your question will be focused on.
3. **Decide** how deeply you wish to assess this concept - what Depth of Knowledge (DOK) level is acceptable for the question? Must it be written to a specified DOK level? If so, what characteristics must your question have to meet your chosen level of complexity? Remember, DOK levels on the Core Content are a ceiling for state assessment, but classroom assessments are free to vary from that ceiling.
   To download content-specific Depth of Knowledge guides click **here**
4. **Choose** the most appropriate question type from the five possible choices.
5. **Establish** the situation by writing a question prompt that reflects the major concepts chosen. The prompt should set the stage for the question that follows it. Even if the item has a graphic, there still must be a prompt that describes or provides information related to the graphic and/or item directions. Try to be economical in your choice of words: the prompt should help engage students. The purpose of the question prompt is not to assess reading ability. Present the prompt in paragraph form, but use bullets to emphasize important details. If the question has a graphic, the graphic should be preceded by an introductory statement.
6. **Design** directions that tell the student how to demonstrate knowledge, making sure the question requires application of knowledge and not merely recall. If the question is in multiple parts at least one of the parts should require students to apply their knowledge.

Tips for designing directions

- ❑ Specify exactly what you want students to answer. Specify numbers of responses if appropriate. Specify three examples if you require three, as opposed to ambiguous terms like "some" or "several."
- ❑ Use simple and direct language. You are evaluating what students know rather than attempting to determine if they can decipher the question.
- ❑ Use language that is both age and grade-level appropriate.
- ❑ Use simple, basic vocabulary when appropriate, and technical vocabulary when you are assessing the students' knowledge of the meaning of the technical word/phrase. For example:

> *When you plant a seed, the roots grow downward. This is called geotropism. Which factor is responsible for geotropism?*
>
> **vs**.
>
> *When you plant a seed, the roots grow downward, and the stem grows upward. Which factor is responsible for the roots growing downward?*

- ❑ If the item asks students to read a passage or examine a graphic and then "give three ways" or "explain two reasons" based on the material given, make sure there are at least three ways or two reasons found in the material provided.
- ❑ If students are asked to generate a certain number of ideas on their own without having a passage or graphic to consult, then there should be at least **twice** that number of possible answers.
- ❑ If the students are required to respond to multiple parts of a question, label each part separately (A, B, C).

7. Create a question-specific scoring guide (rubric).

To download released forms of the KCCT assessment click **here.**

To download a sample collection of open response items from released KCCT forms, **click here.**

Appendix C provides a graphic illustrating the steps in designing an open response item.

Appendix D provides a template for writing open response questions.

Developing a Scoring Guide

Scoring guides are sets of criteria which describe the characteristics of responses at each identifed level. They provide the tool necessary to accurately evaluate student success for each individual question.

Scoring guides are developed following the actual writing of the question. This will allow the teacher to discover potential problems with the question. Constructing the scoring guide will also help ensure that the question is rich enough to support various levels of student responses.

A scoring guide should:

- ❑ Include a clear explanation of what is expected in a quality student response.
- ❑ Defne the various levels of possible student responses and place a value on each level. If there is more than one way a student may achieve a given score level, the scoring guide should include those different possibilities.
- ❑ Enable scoring to be consistent, accurate and as objective as possible. The scoring guide should provide a scorer with the details necessary to score a response.
- ❑ Use simple language and repeat signifcant descriptive words used in the question.
- ❑ Ensure that what is required for a top-level response is clearly indicated in the description.

The Kentucky General Scoring Guide is a good example to follow when developing your own scoring guides. It utilizes four distinct performance levels and serves as a template for constructing an item-specifc scoring guide. To download the general scoring guide click **here.**

Establishing the parameters

The frst step in designing the scoring guide is to determine what a top-level response should say. In other words, what is the expectation for a response that fully and completely answers the question? If answering the question well is difficult for the teacher, is the question itself a reasonable task for students? The question should be revised if you cannot answer it in writing yourself.

The next step is to write descriptions of each of the other levels. While there is no perfect formula for distinctions between levels, there should be appropriate and sequential differences between levels. A good scoring guide helps make the scorer's task easier by clearly stating the differences between levels in discernible and important ways.

Sometimes these distinctions will include quantity indicators. For instance, if the question asks for three examples, a response with two well-defned examples might receive a score of three if you are using a four-level scoring guide. Simple numerical indicators should not be the only difference between levels; quality of work must also be considered.

Scoring Guide

SCORE	DESCRIPTION
4	Student describes three things, in addition to not talking, Susie might do if a stranger came up to her when she was alone. Student clearly explains how each of these actions would help to keep her safe.
3	Student describes three things, in addition to not talking, Susie might do if a stranger came up to her when she was alone. Student generally explains how each of these actions would help to keep her safe. **OR** Student describes three things, in addition to not talking, Susie might do if a stranger came up to her when she was alone. Student clearly explains how one or two of these actions would help to keep her safe.
2	Student describes three things, in addition to not talking, Susie might do if a stranger came up to her when she was alone with limited or no explanation of how each of these actions would help to keep her safe. **OR** Student describes three things, in addition to not talking, Susie might do if a stranger came up to her when she was alone. Student generally explains how one or two of these actions would help to keep her safe.
1	Student demonstrates minimal understanding (e.g., student describes one thing, in addition to not talking, Susie might do if a stranger came up to her when she was alone with limited or no explanation of how the action would help to keep her safe).
0	Student's response is totally incorrect or irrelevant.
Blank	No student response.

For more examples of annotated released items with scoring guides, click **here.**

Appendix E provides a template for creating a four point scoring guide similar to the one above.

Common misconceptions about scoring of open response items on the KCCT

Misconception	Fact
Restating the question is mandatory.	No, it is not required and doing so will not gain additional points.
Responses restating the question without further information will be given at least one point.	No, additional information must be included in order to receive any credit.
A graphic organizer should be done on the response page.	Depending on the type of question being asked a graphic organizer may not be the best way to record the answer. Best practice would be to use the organizer on scrap paper and then record
Answers must be in paragraph form.	Scorers are trained to focus on content and not address the format of the response. A response in any format: bulleted, labeled diagram, or graphic organizer, will be scored. However, the nature of graphic organizers is to outline or abbreviate rather than to give supporting information and/or explanations that are usually required by the questions.
Doing more than required by the prompt will score a 4.	A 4 will be assigned to a response that completely and accurately reflects the correct answer according to the rubric. No additional information is required to score a 4.
Must use content specifc vocabulary in order to score a 4.	Not necessarily, if the content can be adequately expressed without the use of specifc vocabulary appropriate credit will be given to the response. Content vocabulary is only required if the question specifcally asks for its use.
Three or more examples must always be given.	No, the question will specify the number of examples required. Giving more will not increase the odds of receiving a higher score.
Scorers only have 30 seconds to score each piece.	No, scorers can take as much time as needed on each piece.

Classroom Practices for Improving Student Responses

It is important for teachers to remember that the KCCT is a test of content knowledge, and that KCCT-like ORs are designed to assess what students know about the content they have studied. While coaching students on the technique of answering ORs may help them to perform better on the KCCT, endless practice on questions that are unrelated to the concepts being studied in their classes is of dubious value. No amount of practice answering questions can substitute for a lack of content instruction. When practicing ORs with students, teachers should be careful not to emphasize technique at the expense of content.

Best practice in coaching students to perform well would be to practice using well-written questions that assess the concepts being studied at the time, not merely answering randomly chosen released items administered on a rigid schedule. High-quality student practice is essential: quality of practice is far more valuable than quantity of items answered.

Teacher demeanor while practicing open response questions is critical. Students need to believe it matters to their teachers that they do well. Try to be positive, encouraging and upbeat when working on open response skills. Students will value learning this skill only if they are convinced teachers value it as well.

A multi-day classroom model for coaching students to proficiency:

This is a framework for working with students to increase their skill in answering OR questions that is practiced in some form by many schools throughout the state. While there are some variations between districts, this is the basic strategy some schools use to help students score their best on the OR portion of the KCCT.

In some successful schools it is a matter of policy that students revise their responses until they score a 3 or better. Teachers, assistants or volunteers work with students individually until they achieve this goal.

First

- ❑ **Choose an open response** from your current instructional unit that reinforces the critical concepts or essential questions the unit is framed around. The question should be one that permits a richness of discussion, both in content and practice.

If there is a reading passage, read it with the students.

- ❑ **Read the question.** Discuss the wording of the question and ask the students to tell you what it actually requires them to do. Model your thinking as you do the same.

If the question requires listing items from the text, ask students to give examples. List all responses on the board, including some you know are incorrect. When all examples are listed, ask the class to examine the list and decide which responses don't really relate to what the question asks. Cross those responses off the list and explain why. Make sure that this discussion is grounded in the content of the question and not just about the techniques of constructing a response.

- ❑ **Discuss the rubric** with the class. Discuss what it would take to make a 3 or 4. Point out the important words in the 3 or 4 descriptors (several, detailed, complete, 3 or more). Continue to model your thinking as you work through this process. You may also choose to allow the class to construct their own rubric through a similar discussion process.

- ❑ **Have students write a response** without assistance. Collect the responses.

After collecting student responses, review them and choose a few samples to discuss the next day. Choose a variety of responses that includes at least one high-scoring example and several that need improvement. Make them **anonymous** by retyping them or concealing the names. Use a large font and make either overhead transparencies or save a document to display on a projector or TV if available. Sharing photocopies of student responses is another option.

Second

- ❑ **Hand back the student responses.** Explain to students they are going to discuss some responses by their classmates and evaluate them according to the rubric. If you use actual examples from your current students you may want to caution them not to call out if they see their own.

- ❑ **Share a student response.** Ask the class to read it and score it according to the rubric. Read the response aloud if appropriate. Select students or solicit volunteers to justify their scores by comparing the response to the rubric.

- ❑ **Have a class discussion** on how to improve the answer. Frequently refer students back to the rubric as they make suggestions. Be sure to point out and correct any content misconceptions present in the sample responses.

After the class has revised the first sample response, repeat the process until all of the samples have been reviewed.

- ❑ **Have students correct their own responses** by following the same process. Collect the responses again.

Finally

- ❑ **Hand back the student responses** with students arranged in groups of 3 or 4.

- ❑ **Have students read the responses of the other students** in the group and make suggestions for improvement. Remind students they are not to make direct corrections on someone else's paper.

- ❑ **Collect them again** after all group members have reviewed every response and have had an opportunity to make additional corrections based on peer feedback.

Note: peer review time can possibly be decreased as students become more skilled at correcting their own responses.

- ❑ **Read the finalized responses** and assign them a score. Work individually with any student not scoring at least a 3 until his/her response reaches that level or higher.

Note that in this model students do not receive a score from the teacher until after they have had multiple opportunities to revise their answers. This framework gives students the opportunity to recognize their errors, and to learn from the good examples of others.

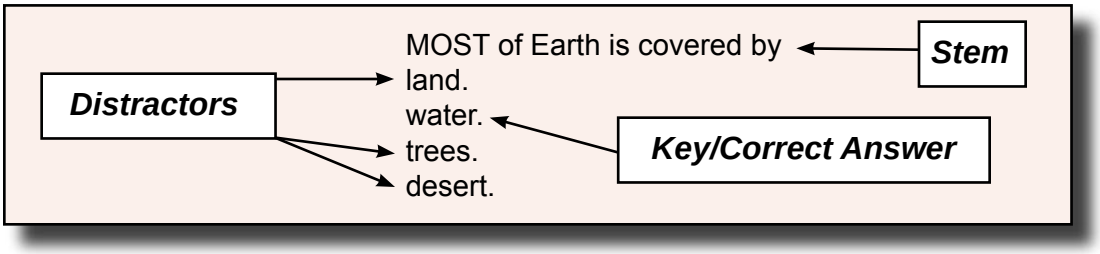
As the year progresses and students become more adept at answering questions the process can be streamlined or shortened, perhaps by scaling back on either the peer review or whole-class review portions of the discussions.

Students might find it helpful to have a working folder of open response items which contains all drafts of their responses. This will allow them to demonstrate their growth over time.

Writing a Multiple Choice Question

Characteristics of a KCCT-like Multiple Choice Item:

- ❑ Directly tied to one or more content standards
- ❑ Consists of a stem (statement or question) and response selections (correct response and distractors)



Steps in constructing a Multiple Choice Question

1. **Decide** which Program of Studies, Core Content or other standard(s) you wish to assess.

2. **Identify** the major concept(s) or learning target within these standards you want to assess. Most content standards need to be 'deconstructed' into learning targets that specify what student learning and skill/ability should be demonstrated.

3. **Decide** how deeply you wish to assess this concept - what DOK level is acceptable for the question? Must it be to a specified DOK level? If so, what characteristics must your question have to meet your chosen level of complexity? Remember, DOK levels on the Core Content are a ***ceiling*** for state assessment, but classroom assessments are free to vary from that ceiling. **DOK** support materials are available on the KDE web site.

4. **Design** the stem or question.
   Match the question to the standard or target.
   Use clear wording/vocabulary that is both age and grade-level appropriate.

   - ▼ *Keep the focus on finding out what students know rather than attempting to determine if they can decipher the question.*
   - ▼ *Stick to basic vocabulary in general. Use technical vocabulary when you are assessing the students' knowledge of the MEANING of the technical word/phrase.*

   Ask a full or complete question. Direct questions are best, but incomplete statements are sometimes necessary to avoid awkward phrasing or convoluted language.
   Highlight (**bold** or ALL CAPS) critical words (e.g., most, only, except).
   Have a colleague review it.

Poorly Written Stem

The mean

A. is the most frequently occurring score in a distribution.
B. corresponds to the 50th percentile in the distribution.
C. is the arithmetic average of the scores.
D. is the difference between the highest and lowest scores.

This question requires too much reading time for the student.
Reword the stem to present a problem and save the student reading time.

Well Written Stem

The mean of a distribution of tests scores is the

A. most frequently occurring score.
B. 50th percentile.
C. arithmetic average.
D. range

5. Design the key and distractors.

A. Provide ONE and only ONE correct answer (key).
B. Include plausible options that demonstrate a student's level of understanding.

- ▼ Consider using common misconceptions or errors as response options.
- ▼ Avoid humorous or nonsensical response options.

C. Use clear wording/vocabulary that is both age and grade-level appropriate (see #4 above).
D. Maintain a consistent or 'parallel' style, length, and visual display.
E. Logically order the response options that include numbers, dates, etc. Numbers should be listed in ascending or descending order. Unless testing the sequence of events from a passage, list options in the order in which they appear in the passage.
F. Avoid using the options "all of the above" and "none of the above."
G. Have a colleague review them.

Poorly Designed Response Choices

Contrast is a principle of design that refers to major differences between things. Which pair of colors below has the most contrast?

A. red and blue
B. red and orange
C. red and brown
D. black and yellow*.

There are many ways that a response option may stand out from the other options. One way is if one of the options begins with a different word than the other three options.

Well Designed Response Choices

Contrast is a principle of design that refers to major differences between things. Which pair of colors below has the most contrast?

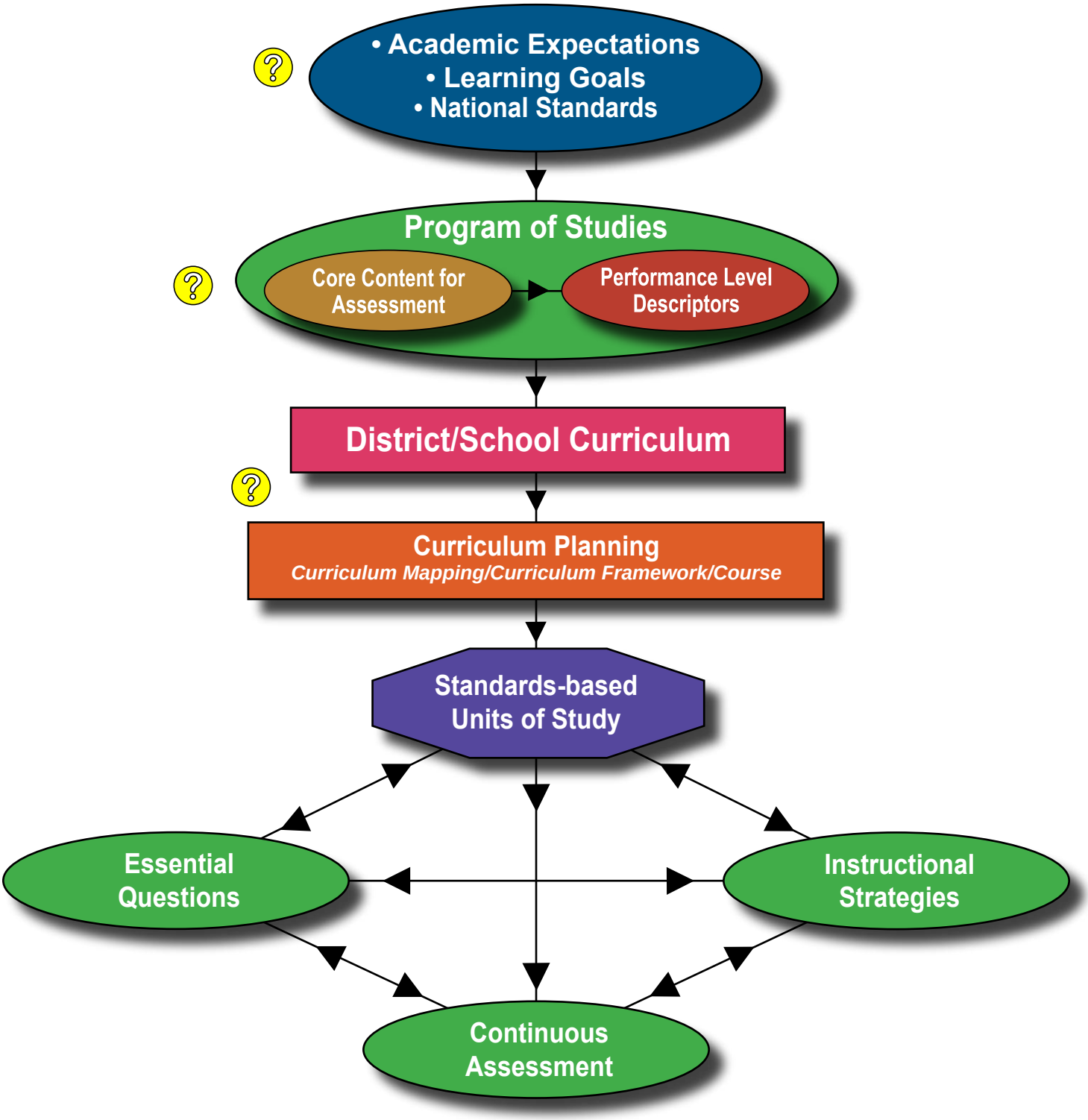
A. red and blue
B. red and orange
C. black and brown
D. black and yellow*

Additional Design Considerations

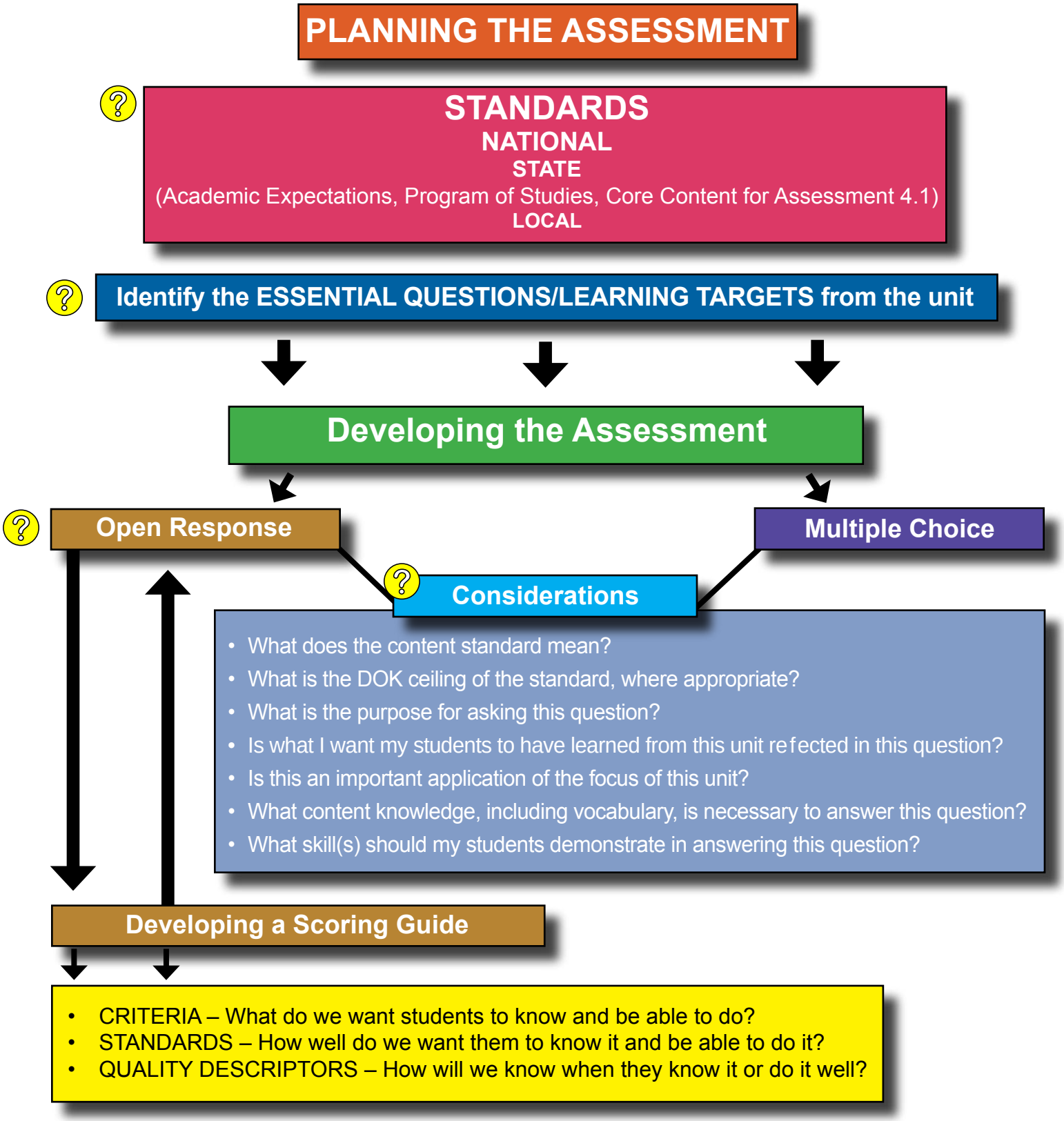
- The item stems should be stated in positive terms as much as possible. Item stems such as "Which is **not**…" should be used sparingly.
- The use of negatives (e.g., "not") in **both** the item stem and the answer choices is very confusing.
- Avoid the use of absolute terms (e.g., always, never, all, none, only) in the distractors as much as possible.
- Whenever possible, avoid answer choices that are mutually exclusive opposites (e.g., living/nonliving, fction/nonfction). When such opposites are used, a student's chance of getting the item correct becomes 1 in 2 versus 1 in 4.
- Avoid "*what do you think* . . ." because any answer will have to be considered correct.
- Try to keep the stem as short as possible. Statistics show that long question stems tend to cause greater numbers of incorrect responses.
- Number the questions (stems), and use letters for the responses. If there are students who have diffculty distinguishing between lowercase "b" and "d" it is preferable to use capital letters.
- Distribute correct answers so they do not form a recognizable pattern.
- Avoid using language in the question that might accidentally lead students to favor an answer based on language alone.
- When referring to a map, table or fgure, label it for easy reference and develop an introductory sentence about the graphic that precedes it on the page. Follow the graphic with the question stem/responses (e.g., "*Use the map of Kentucky to answer the question below*.").
- One question should not give a clue to the answer of another question.
- Avoid questions which have only microscopically fne distinctions between the answers, unless the ability to make these distinctions is the target being assessed.

Appendix A:
The Big Picture Curriculum, Instruction, Assessment

The Big Picture: Curriculum, Instruction, Assessment



Appendix B:
Designing an Assessment



Appendix C:
Constructing an open response question

1. **Decide** which Core Content, Program of Studies or other standard(s) you wish to assess.

2. **Identify** the major concept(s) within these standards you want to assess.

3. Decide how deeply you wish to assess this concept - what DOK level is acceptable for the question? Must it be to a specifed DOK level? If so, what characteristics must your question have to meet your chosen level of complexity?

4. Choose the most appropriate question type from the fve possible choices (see above)

5. Establish the situation by writing a question stem that refects these major concepts. The stem should set the stage for the question that follows it.

6. Design directions that tell the student how to demonstrate knowledge, making sure the question requires application of knowledge and not merely recall. If the question is in multiple parts at least one of the parts should require students to apply their knowledge.

7. Create a question-specifc scoring guide (rubric). See 'Developing a Scoring Guide.'

Appendix D:
Open Response Template

Template for constructing an open response question

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Teacher_____ Topic/Unit_____
Standard(s)- what standards (Academic Expectations, Program of Studies, Core Content, local curriculum) are to be assessed with this question?
Depth of Knowledge- what DOK level is this question?
Learning Target(s)- what specific learning target does the question assess?
Content-specific vocabulary- are there any terms that MUST be included in the prompt or directions to adequately assess the learning target(s)?
Question Format- which question format is most appropriate? ☐ Scaffolded ☐ Single Dimension/Component ☐ Two or More Components ☐ Student Choice ☐ Response to Provided Information
Graphic- is a graphic (chart, diagram, graph, map, etc.) part of the question?
Item Name (title)
Prompt- write a statement to engage the student and/or establish the parameters of the question.
Directions- state the specific task the student is to accomplish. Use clear, direct language and specify exactly what the student needs to do.

Appendix E:
Scoring Guide Template

Scoring guide template

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Scoring Guide

SCORE	DESCRIPTION
4	
3	
2	
1	
0	Student's response is totally incorrect or irrelevant.
Blank	No student response.