

## NCF – Envirothon Test Writing Guidelines - Quick Reference

### Test Format

- Create tests in a Microsoft Word document. Submit tests as a Word document for reviews of the first and second drafts. Final drafts will be submitted as a PDF to preserve formatting.
- Times New Roman font only for ALL questions. Variation in size, **bold**, underline, centered and *italics* may be used to change/enhance appearance to titles, stations, sections, etc. Minimum font size is 12 point.
- All tests will have 1-inch margins, with the right margin used for grading.
- All tests must have point blanks to the right of each question, with the point value for the question, followed by a blank for the graders to fill in the team’s points (e.g.: 5 pt / \_\_\_\_)
- Tests must total 100 points.
- All questions must be numbered and assigned a point value. While partial credit may be given on multiple-point questions, only whole points are allowed (no fractional points).
- Spacing should be consistent throughout the test.
- Each page of the test should have the page number in the bottom left corner.
- All parts of a question should be on the same page (e.g., question and answer choices).
- When submitted for review, answers and references are required for each question.
- All tests should have a cover page stating “NCF-Envirothon (Host Name and Year)”, the station name, a blank for the Team Number, a section for the team’s score, date of test, length of time to complete test, number of pages in test, names of station leaders, and a section for instructions and rules. (See Cover Page Template in Full Test Writing Guidelines.)
- Cover sheets will be color-coded for each station: Light green for Forestry, light blue for Aquatic Ecology, tan for Soils and Land Use, pink for Wildlife, and light yellow for Current Issue.
- Below is a percentage breakdown of topic categories for each test:

<b>Topic Category</b>	<b>Percentage of Questions on Each Station Test</b>
Terminology	10%
Identification	20%
Equipment / Career	10%
Management Planning	50%
Overall Importance of the Resource	10%

- There are also guidelines for each test as a whole, that can span many topic areas within each station. These percentages may overlap.
  - Across all topics for each station:
    - Test Question Content
      - 70% of the test should be comprised of generally applicable information
      - 30% of the test should be composed of Host state/province, site-specific questions
      - 70% of the test questions should be from the reference material provided to the students
      - 30% of the test questions can be from topics covered during training day
    - Test Question Format
      - 50% of the test should address problem-solving and technical skills
      - 50% of the test should be hands-on and experiential
- All test questions will be answerable by applying knowledge derived from NCFE/Host-Provided materials pre-competition and onsite.
- One or more tiebreaker questions will be designated per station test to determine station high scores in the event of a tie.

### **Test Length**

- Tests must be completed by students within a 55-minute testing window.
- Hands-on questions and critical thinking questions take more time to answer than a simple definition question.
  - This is particularly true for questions answered using the aid of identification keys, soil surveys, charts, maps, or another resource material.
- Travel time between interactive stations must also be factored into total test time.
- Group questions together by interactive station, to facilitate transitions for the students.

### **Question Format**

- All questions should be clearly worded, using correct grammar and punctuation.
- Both metric and imperial measurements should be included for all questions.
- Do not give any grammatical clues about the answer in the question (e.g. a/an, is/are).
- For short answer or fill-in-the-blank questions, you must specifically state what type of answer will get credit.

- If you require a list, state how many items are needed and provide that many answer blanks. (Example: List three benefits of riparian buffers for stream health:)
- If explanations or definitions are required for a short answer question, make sure that is clearly stated.
- If you require the answer to be a complete sentence, include that in the question.
- Any images, graphs, or charts used should be high-quality pictures with clear labels. Any inclusion of graphics should enhance the presentation of the question.
  - If you are including a graphic that requires the students to label parts of the picture, make sure the graphic clearly indicates what must be labeled.
  - Ensure that there is an obvious answer blank for students to write their answer.
  - If pictures need to be in color, make sure that is communicated to those printing the tests!

## Types of Questions

- We encourage questions that involve hands-on problem solving, as well as site-specific critical thinking questions!
- Environmental assessment activities provide excellent opportunities for hands-on involvement.
  - The result of these hands-on activities can also be referred to in later questions by asking teams to interpret and apply the results.
  - You can also use the site conditions at the station to incorporate more first-hand experiences into the test. (I.e., Don't just ask students to list three erosion prevention practices – Ask them to list three practices they see at the testing site!)
  - Examples of Environmental Assessment: Soil pit analysis, Wildlife habitat analysis, Water quality analysis, and Forest management analysis.
- Multiple-choice questions are the easiest type of question to grade; however, this does not mean that your multiple-choice questions must be easy to answer!
  - A good multiple-choice question tests the *application of a concept* – not a regurgitated definition of a term or a fact found word-for-word in the resource material.
  - There should be a minimum of four and a maximum of five answer choices per question, and all multiple-choice questions on each test should have the same number of answer choices.
  - Multiple-choice questions should not be written in the form of an unfinished sentence. The question should be meaningful by itself.
  - All answer choices should be plausible, even if they aren't correct. Avoid “throw away” answer choices that could be eliminated immediately.
- True/false questions are NOT RECOMMENDED for NCF-Envirothon tests.
- Questions should encourage problem solving, or application of knowledge or a skill which demonstrates the understanding of a concept.

- Only a small portion of station questions should be recall-type questions (i.e., questions that ask for a definition or a fact).
- Questions that teach a new concept and then ask the students to apply that concept are valuable in that the students learn something new while also being tested for their problem-solving ability.
- Matching questions should have clearly stated directions and should test only one relationship between the two columns (e.g. definition or cause-and-effect).
  - Matching questions should contain a maximum of ten items.
  - The “answer” list in the right column should have 2 to 3 items more than the left column to deter students from relying on process of elimination.
- Fill-in-the-blank questions should be unambiguous.
  - Omit only significant words from the statement and keep the answer to a single word or phrase. Do not put too many blanks in the sentence.
  - A sentence that makes sense with the answer key may not make sense without it. If you were given the fill-in-the-blank question without what resource it came from, would you be able to answer it?
  - Make sure the grading rubric contains ALL correct answers.

### **Level of Questions**

- Tests are written at an advanced AP/IB high school to early college level.
- We want the majority of questions on Envirothon tests to be at a higher level of cognitive processing.
- Bloom’s Taxonomy outlines the different levels of learning and application:
  1. Remember
  2. Understand
  3. Apply
  4. Analyze
  5. Evaluate
  6. Create
- Most questions on each test should be at level 3 and up!
- We want to encourage critical thinking and problem solving as much as possible.

### **Grading**

- Develop a comprehensive grading rubric for each test.
  - The rubric should contain ALL potentially correct answers, particularly for short answer and fill-in-the-blank questions. It is important to write clear and unambiguous questions so that possible answers are limited.

- Rubrics should also contain a point break-down for partial credit (e.g., students get 1 point for naming the correct term and 1 point for defining it, total of 2 points.)
- Rubrics should facilitate easy, clear, and consistent grading for all tests.
- Rubrics should include both metric and imperial answers for measurements.
- Rubrics should include a citation for where the answer was found in the study material provided pre-competition or in the information provided to the students onsite.
- Short answer and fill-in-the-blank style questioning will most likely take more time to grade. If your station tests contain a large number of these types of questions, you may need to have a number of people assist in scoring. It is strongly recommended that each page of the test be graded by the same judge to insure consistency in scoring. You should have people checking their work and the addition of points to be sure, but if judge ‘A’ grades page 1, that judge should grade all page 1’s.