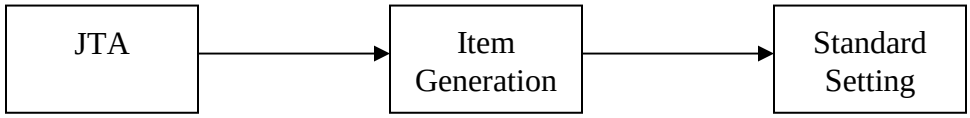
SERVSAFE® EXAM DEVELOPMENT FAQs

How is the ServSafe® examination developed?

The ServSafe® examination development follows three basic steps. First, a **J**ob **T**ask **A**nalysis (JTA) is completed. The JTA outlines the essential knowledge and skills required by an entry-level practitioner in order to serve food safely and protect the public from foodborne illness. Next, items are written, reviewed and pilot tested. Finally, standard setting is performed, and the passing score is determined. All of these steps require input from industry professionals, or **S**ubject **M**atter **E**xperts (SMEs).

Initial Steps in Exam Development



What guidelines are used in developing the exam?

The development of the ServSafe examination is based on guidelines put in place by the American Educational Research Association, the American Psychological Association, and the National Council for Measurement in Education (*Standards for Educational and Psychological Testing*). Additionally the ServSafe® Exam is accredited by ANSI against the *Conference for Food Protection (CFP) Standards for Accreditation of Food Protection Manager Certification Programs*. The development of the ServSafe® examination follows these guidelines as well.

What is a JTA?

A Job Task Analysis (JTA) is an outline of the essential tasks performed by an entry-level food protection manager as well as the knowledge and skills required to perform these tasks safely and correctly. The JTA tells examination and content developers what should be included on the examination, as well as what should be in the training materials.

Who participates in the JTA?

A representative group of industry experts is recruited to participate in the development of the JTA. This group is made up of individuals representing all segments of the industry. They have various levels of experience and represent all regions of the country. This ensures that the content of the examinations is not biased toward one specific segment or group of people. It also ensures that the knowledge outlined by the JTA is only essential knowledge (the “need to know” information, as opposed to the “nice to know” information).

How often is the JTA performed?
A new ServSafe® JTA is performed every five years, and may be revisited if there is a significant change in the role of the food protection manager. This ensures that test developers have the most up-to-date information when writing test questions.

How are exam questions selected for the examination?
The final stage of the JTA is the development of the Exam Specifications, or Exam Blueprint. The Blueprint outlines the percentage of questions required on each examination from each major content area of the JTA. This ensures that every examinee is presented with the same number of questions from the same content areas, regardless of when the exam is taken. The ServSafe® score report provides this information to examinees and instructors.

Number of Items (By Content Area) on the ServSafe® Examination, based on the 2021 ServSafe® Food Protection Manager Job Task Analysis
1. Management of Food Safety Practices (10.00%, 8 questions)
2. Hygiene and Health (15.00%, 12 questions)
3. Safe Receipt, Storage, Transportation and Disposal of Food (16.25%, 13 questions)
4. Safe Preparation and Cooking of Food (18.75%, 15 questions)
5. Safe Service and Display of Food (10%, 8 questions)
6. Cleanliness and Sanitation (15.00%, 12 questions)
7. Facilities and Equipment (15.00%, 12 questions)

TOTAL: 80 questions

How is the equivalency of exam forms ensured?
The examination forms are constructed using Automated Test Assembly (ATA) to meet the content area requirements as outlined in the examination blueprint as well as statistical and psychometric specifications. Statistical information recorded for all ServSafe items includes examination usage history, item difficulty and item discrimination indices. The content attributes documented for each ServSafe item include the content classification of the item based on the ServSafe Food Protection Manager test specifications, the cognitive behavior that the item is intended to test, the reference source cited by the author to support the accuracy of the item, and validity ratings collected from ServSafe item writers. Statistical and content information are retained for each ServSafe item and are updated quarterly as the status of items change. Item banking software tracks changes to items and retains previous versions for later reference.

The process of developing new examination forms is initiated by reviewing the statistical data accrued for the previous quarter's examination forms. Examination items with undesirable psychometric characteristics (items that are too difficult for candidates, items that do not distinguish among candidate ability groups, etc.) are flagged for Subject Matter Expert (SME) review during this process. Items revised by SMEs are first cloned, then changes are made to the item, and the item ID is appended with an A (or B or C) to reflect the revision. The revised item is marked as "Pretest" in the item pool and the original marked as "Deleted." In addition, item exposure is tracked quarterly and items exceeding the threshold removed from consideration for the current form build. Approximately 20% of the items on every form overlap with each other and with a common target form administered previously. This technique is commonly referred to as a Non-Equivalent groups Anchor Test (NEAT) design. This is to ensure that post-equating can be performed if that is deemed necessary.

Every quarter two unique forms of 80 operational items are developed, along with three versions of each form with items scrambled. Each version contains a unique pre-test block of 10 items, for a total of 80 items piloted per quarter (2 unique forms + 3 versions/form = 8 x 10 = 80).

The forms construction process proceeds as follows, using the Classical Test Theory-calibrated item pool, target test difficulty, and number correct cut-score. The item pool is updated with current item statistics and item exposures. Available items are pulled for forms construction (i.e., active status, item exposure less than threshold, CTT parameters, enemy items). These parameters are entered into an Excel spreadsheet that has been specially developed to create parallel forms based on item parameters, content constraints, test lengths, overlap, etc. The resulting output is a matrix of item IDs x forms that meet psychometric and content constraints and are as similar as possible to the target form. These items are then compared to a list of enemy items and replaced if found to have enemies on current form.

Who writes the items?

Item writers must meet specific criteria and must complete an application process. The final item-writing committee is selected based on credentials and areas of expertise. Committee members are asked to serve a one-year term as an item writer, which involves an in-depth, item writing training session. During the training they are trained and supervised in writing quality items and taught how to use the online item writing tool. Because the item writing team consists of individuals with various perspectives and

levels of experience, the team of assembled writers can draw upon current, real-world scenarios that are pertinent to their food safety and targeted to the food protection manager.

How do you know if the items are any good?
Newly written items are subjected to multiple reviews before being eligible for pilot testing and presentation on an exam. During the online item writing session, items are subjected to an initial review by more experienced item writers. Once the online item writing drive closes, items are then professionally edited and prepared for an in-person item validation session.

At the item validation meeting, SMEs perform a final quality check on each item. At least three reviewers review each item for content, technical accuracy, quality, cognitive level, and adherence to NRA's Item Writing Guidelines. Items that are negatively worded will be rejected, such as items that begin with "All of the following *except….."* Fictitious worker names—as well as the actual, brand names of equipment and food—are made generic so that they will be applicable to all industry segments. For example, *"A pizza parlor"* is changed to *"a foodservice operation,"* and *"A chef preparing vegetables for tonight's Spicy Chicken Supreme"* is changed to *"a cook preparing chicken."* Reviewers also ensure that the reference information is correct, that there is only one correct answer, and that the item actually addresses the task statement from the JTA to which it was written. This step ensures that the examination focuses on knowledge that is important and relevant to food safety.

Once reviewers have reviewed the items on the above criteria and made any necessary changes, they proceed to review the item for mastery level, importance to entry-level practice, and how critical the item is in differentiating competent from incompetent practitioners.

Once the entire review process is completed, the remaining new items are eligible for pilot testing. Ten pilot items are randomly distributed throughout each examination, and their performance is analyzed. After statistical analyses indicate the item has performed well it becomes an operational item (a scored item). If the item's performance is poor, it is deleted or revised and then subjected to the above review process again.

What is a pilot item?
A pilot item is an exam item that is not worth any points. A newly written item that has survived multiple reviews is eligible for placement on an exam as a pilot item. Pilot

items are randomly placed on an examination. Answering a pilot question incorrectly does not affect the examinee's test score. Pilot items are simply used to gather statistical information on the item's performance. If the pilot item performs well, it becomes an operational item (scored item) and can be selected for placement on future exams. If the pilot item does not perform well, it is either deleted or resubmitted to the item review process. Pilot items help build up the item bank (or pool of questions) from which a test is developed. Consistently using the same items over and over on an exam causes overexposure; therefore, it is important to constantly add new items as a security measure. Pilot items allow for this.

Why are there 90 items on the test?
The examinee's score is based on the 80 operational (scored) items. The additional 10 items are pilot items and are not worth any points.

How is the passing score determined?
Once the JTA has been completed, the Exam Blueprint determined, and items written, the first form of an exam is developed and then the standard setting meeting is held. Items for this base exam are selected to meet the content requirements of the Blueprint. The exam form is evaluated by another, independent group of SMEs. At this meeting, the items are examined individually, and the likelihood of an entry-level practitioner answering the question correctly is determined. Once all the items have been evaluated, the overall passing score is statistically determined.

How often are new items written?
New items are written annually.

How can I become an item writer?
For information on becoming an item writer, please send an email to exams@restaurant.org for an application.

How can I become part of the review committee?
Item reviewers are seasoned item writers therefore, should you be interested in serving as an item reviewer, you should apply to be an item writer and work hard at submitting exceptional items.