

## Certified Quality Auditor (CQA) BOK Map 2012 – 2004

The Certified Quality Auditor Body of Knowledge (BOK) has been updated to ensure that the most current state of practice is being tested in the CQA examination. If you want to read more about how a BOK is updated, see page 4 of the ASQ [Certification Handbook](#) (228 KB PDF) on the [www.asq.org](http://www.asq.org) website.

Part of the updating process includes conducting a job analysis survey to determine whether the topics in the previous BOK are still relevant to the current job role and to identify any new topics that have emerged since that previous BOK was developed. The results of the CQA job analysis survey show that all of the topics that were in the 2004 BOK are still relevant to the job roles of quality auditors: i.e., all of the previous topics met the survey validation threshold to be included in the new BOK. The tables below show the key changes between the two BOKs. The biggest change came from rearranging content from Audit Process (BOK Area II) to Audit Management (BOK Area IV), which resulted in a shift in the number of questions asked in each of those areas. In addition, subtopics were added throughout the BOK to clarify specific content.

The new CQA BOK will be used as the basis for the CQA exam at the December 1, 2012, administration.

### General comments about ASQ Body of Knowledge updates

When the Body of Knowledge (BOK) is updated for an ASQ exam, the majority of the material covered in the BOK remains the same. There are very few programs that change dramatically over a 5-year period. One of the points that we make to all of the exam development committees is that ASQ Certification Examinations need to reflect “the state of practice,” not “the state of the art.” This helps to keep the programs grounded in what people currently do, rather than being driven by the latest hot-topic improvement idea or trend. Typically, the biggest change in any updated BOK is in how the content is organized. When a new BOK is announced and posted on the ASQ website, we also include this “BOK Map” to highlight the changes between the two bodies of knowledge: old and new. The BOK map clearly identifies any new content that has been added to the exam, as well as any content that has been removed from the exam.

With regard to exam preparation materials, you should be able to use any of the reference books that are currently listed on the bibliography for the exam program. See [CQA references](#) on the [www.asq.org](http://www.asq.org) website. These are the source materials that the exam development committees use to write questions and verify answers.

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2004 BOK	2012 CQA BOK Details	New Elements in 2012 BOK
	<b>I. Auditing Fundamentals (27 Questions)</b>	<u>Decreased</u> by 3 Questions
I.C.	<b>A. Types of quality audits</b>	Added subtopics
I.C..	1. Method Define, differentiate, and analyze various audit types by method: product, process, desk, department, function, element, system, management. (Analyze)	
I.C.	2. Auditor-auditee relationship Define, differentiate, and analyze various audit types by relationship: first-party, second-party, third-party, internal and external. (Analyze)	
I.C.	3. Purpose Define, differentiate, and analyze various audit types by purpose: verification of corrective action (follow-up) audits, risk audits, accreditation (registration) and compliance audits, surveillance and for-cause audits. (Analyze)	
IV.B.5.	4. Common elements with other audits Identify elements such as audit purpose, data gathering techniques, tracing, etc., that quality audits have in common with environmental, safety, financial, and other types of audits. (Apply)	
I.A.	The contents from “Basic terms & concepts” in the 2004 BOK has been redistributed elsewhere in the BOK, to avoid duplication.	
I.B.	<b>B. Purpose and scope of audits</b>	
II.A.1.	1. Elements of purpose and scope Describe and determine how the purpose of an audit can affect its scope. (Apply)	
I.B. & IV.B.6.	2. Benefits of audits Analyze how audits can be used to provide an independent assessment of system effectiveness and efficiency, risks to the bottom line, and other organizational measures. (Analyze)	
I.D.	<b>C. Criteria to audit against</b> Define and distinguish between various audit criteria, such as external (industry, national, international) standards, contracts, specifications, quality awards, policies, internal quality management system (QMS), sustainability, social responsibility, etc. (Analyze)	
I.E.	<b>D. Roles and responsibilities of audit participants</b> Define and describe the functions and responsibilities of various audit participants, including audit team members, lead auditor, client, auditee, etc. (Apply)	
I.F.	<b>E. Professional conduct and consequences for auditors</b>	
I.F.3.	1. Professional conduct and responsibilities Define and apply the ASQ Code of Conduct, concepts of due diligence and due care with respect to confidentiality and conflict of interest, and appropriate actions in response to the discovery of illegal activities or unsafe conditions. (Apply)	
I.F.2.	2. Legal consequences Identify potential legal and financial ramifications of improper auditor actions (carelessness, negligence, etc.) in various situations, and anticipate the effect that certain audit results can have on an auditee’s liability. (Apply)	

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I.F.1.	3. Audit credibility Identify and apply various factors that influence audit credibility, such as auditor independence, objectivity, and qualifications. (Apply)	
<b>II. Audit Process (42 Questions)</b>		<u>Decreased by 18 Questions</u>
II.A.	<b>A. Audit preparation and planning</b>	
II.A.1.	1. Elements of the audit planning process Evaluate and implement the basic steps in audit preparation and planning: verify audit authority; determine the purpose, scope, and type of audit; identify the requirements to audit against and the resources necessary, including the size and number of audit teams. (Evaluate)	
II.A.2.	2. Auditor selection Identify and examine various auditor selection criteria, such as education, experience, industry background, and subject-matter or technical expertise. (Analyze)	
II.A.3.	3. Audit-related documentation Identify the sources of pre-audit information and examine audit-related documentation, such as audit criteria references and results from prior audits. (Analyze)	
II.A.4.	4. Logistics Identify and organize audit-related logistics, including travel, safety and security considerations, the need for escorts, translators, confidentiality agreements, clear right of access, etc. (Analyze)	
II.A.5. & II.B.3.	5. Auditing tools and working papers Identify the sampling plan or method and procedural guidelines to be used for the specific audit. Select and prepare working papers (checklists, log sheets, etc.) to document the audit. (Create)	Incorporated “working papers” from II.B.3.
II.A.6.	6. Auditing strategies Identify and use various tactical methods for conducting an audit, such as forward and backward tracing, discovery, etc. (Apply)	
II.B.	<b>B. Audit performance</b>	
II.B.7.	1. On-site audit management Interpret situations throughout the performance of the audit to determine whether time is being managed well and when changes need to be made, such as revising planned audit team activities, reallocating resources, adjusting the audit plan, etc., and communicate with the auditee about any changes or other events related to the audit. (Analyze)	
II.B.1.	2. Opening meeting Manage the opening meeting of an audit by identifying the audit’s purpose and scope, describing any scoring or rating criteria that will be used during the audit, creating a record of the attendees, reviewing the audit schedule, and answering questions as needed. (Apply)	
II.B.2.	3. Audit data collection and analysis Use various data collection methods to capture information: conducting interviews, observing work activities, taking physical measurements, examining documents, etc. Evaluate the results to determine their importance for providing audit evidence. (Evaluate)	

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II.B.4.	4. Establishment of objective evidence Identify and differentiate characteristics of objective evidence, such as observed, measured, confirmed or corroborated, and documented. (Analyze)	
II.B.5.	5. Organization of objective evidence Classify evidence in terms of significance, severity, frequency, and level of risk. Evaluate the evidence for its potential impact on product, process, system, cost of quality, etc., and determine whether additional investigation is required to meet the scope of the audit. (Evaluate)	Revised title from 'Observations'
II.B.8.	6. Exit and closing meetings Formally manage these meetings: reiterate the audit's purpose, scope, and scoring or rating criteria, and create a record of the attendees. Present the audit results and obtain concurrence on evidence that could lead to an adverse conclusion. Discuss the next steps in the process (follow-up audit, additional evidence-gathering, etc.), and clarify who is responsible for performing those steps. (Apply)	
II.C.	<b>C. Audit reporting</b>	
II.C.1.	1. Report development and content Group observations into actionable findings of significance, and identify the severity and risk to the client and the auditee. Use appropriate steps to generate the audit report: organize and summarize details, review and finalize results, emphasize critical issues, establish unique identifiers or codes for critical issues to facilitate tracking and monitoring, etc. (Create)	Revised title from 'Basic steps'
II.C.2.	2. Effective reports Develop and evaluate components of effective audit reports, including background information, executive summary, prioritized results (observations, findings, opportunities for improvement, etc.). Use graphical tools or other means of emphasizing conclusions, and develop a timeline for auditee response and/or corrections. (Create)	
II.C.3.	3. Final audit report steps Obtain necessary approvals for the audit report and distribute it according to established procedures. Identify the contents of the audit file and retain the file in accordance with established policies and procedures. (Apply)	Added 'distribution' element to clarify
II.D.	<b>D. Audit follow-up and closure</b>	
II.D.1.	1. Elements of the corrective action process Identify and evaluate various elements: assignment of responsibility for problem identification; the performance of root cause analysis and recurrence prevention. (Evaluate)	Removed 'preventive action' to avoid confusion
II.D.2.	2. Review of corrective action plan Evaluate the acceptability of proposed corrective actions and schedule for completion. Identify and apply strategies for negotiating changes to unacceptable plans. (Evaluate)	
II.D.3.	3. Verification of corrective action Determine the adequacy of corrective actions taken by verifying and evaluating new or updated procedures, observing revised processes, conducting follow-up audits, etc. (Evaluate)	
II.D.4.	4. Follow-up on ineffective corrective action Develop strategies to use when corrective actions are not implemented or are not effective, such as communicating to the next level of management, reissuing the corrective action request, and re-auditing. (Create)	
II.D.5.	5. Audit closure	

2004 BOK	2012 CQA BOK Details	New Elements in 2012 BOK
	Identify and apply various elements of, and criteria for, audit closure. (Apply)	
	<b>III. Auditor Competencies (25 Questions)</b>	<u>Increased by 2 Questions</u>
III.A.	<b>A. Auditor characteristics</b> Identify characteristics that make auditors effective: interpersonal skills, problem-solving skills, attention to detail, cultural awareness and sensitivity, ability to work independently as well as in a group or on a team, etc. (Apply)	
III.B.	<b>B. On-site audit resource management</b> Identify and apply techniques for managing audit teams, scheduling audit meetings and activities, making logistical adjustments, etc. (Apply)	
III.C.	<b>C. Conflict resolution</b> Identify typical conflict situations (mild to vehement disagreements, auditee delaying tactics, interruptions, etc.) and determine appropriate techniques for resolving them: clarifying the question or request, reiterating ground rules, intervention by another authority, cool-down periods, etc. (Analyze)	
III.D.	<b>D. Communication and presentation techniques</b> Select and use written, oral, and electronic communication techniques for presentations made during audits for opening, closing, ad hoc meetings, etc. Use technical and managerial reporting techniques, including graphs, charts, diagrams, multimedia aids, etc., in various situations: domestic, global, in-person, virtual (e-audits), multiple sites simultaneously, etc. (Evaluate)	
III.E.	<b>E. Interviewing techniques</b> Select and use appropriate interviewing techniques and methodologies. (Apply)	Expanded with subtopics
	1. Use open-ended or closed question types.	
	2. Use active listening, paraphrasing, empathy, etc.	
	3. Recognize and respond to non-verbal cues: body language, the significance of pauses and their length, etc.	
	4. Determine when and how to prompt a response: when supervisors are present, when interviewing a group of workers, when using a translator, etc.	
III.F.	<b>F. Team dynamics</b> Define, describe, and apply various aspects of team dynamics. (Apply)	Expanded with subtopics
	1. <u>Team-building</u> : clarifying roles and responsibilities for participants and leaders to ensure equitable treatment for all team members, providing clear direction for deliverables, identifying necessary resources and ensuring their availability, etc.	
	2. <u>Team facilitation</u> : providing coaching and guidance, defusing clashes between members, eliciting input from all, cultivating objectivity, overseeing progress, encouraging diverse views and consensus, etc.	
	3. <u>Stages of team development</u> : forming, storming, norming, and performing	
	<b>IV. Audit Program Management &amp; Business Applications (30 Questions)</b>	<u>Increased by 15 Questions</u>
IV.A.	<b>A. Audit program management</b>	Expanded

<b>2004 BOK</b>	<b>2012 CQA BOK Details</b>	<b>New Elements in 2012 BOK</b>
		considerably

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IV.B.4.	1. Senior management support Identify and explain management's role in creating and supporting the audit function. (Understand)	
IV.A.	2. Staffing and resource management Develop staffing budgets that provide adequate time for auditors to plan, conduct, and respond to scheduled audits, including time and resources that internal auditees need to participate. Identify any special equipment resources needed and ensure their adequacy and availability. Consider the use of and requirements for special audits (outsourced or contracted audits, virtual or e-audits, shared audits, etc.) as driven by costs, geography, etc. Evaluate results and adjust resources as needed on a regular basis. (Evaluate)	Increased detail
IV.A.	3. Auditor training and development Identify minimum audit knowledge and skill requirements for auditors. Provide training on various aspects of the audit process such as relevant standards, regulatory influences, facilitation techniques, etc. Provide training on diversity and cultural influences ( ethnicity, gender, age, organized labor, etc.) and how such factors can affect communications and other interactions among audit participants. (Create)	Increased emphasis & expanded specifics on diversity
IV.A.	4. Audit program evaluation Select the correct metric to evaluate the audit program, including tracking its effect on the bottom line and the risk to the organization. (Evaluate)	Increased detail
IV.A.	5. Internal audit program management Develop procedures, policies, and schedules to support the organization's objectives. Review internal audit results to identify systemic trends. (Create)	Increased detail
	6. External audit program management Develop procedures, policies, and schedules in support of the supplier management program, including supplier qualification surveys, surveillance audits, supplier improvement, etc. (Create)	Increased emphasis on supplier monitoring
IV.B.6.	7. Best practices Analyze audit results to standardize best practices and lessons learned across the organization. (Analyze)	Increased emphasis on topic as a whole
I.B.	8. Organizational risk management Analyze how the audit program affects an organization's risk level and how the risk level can influence the number and frequency of audits performed. (Analyze) [Note: Tools and techniques for managing risk are covered in BOK area V.H.]	Increased emphasis & detail to differentiate it from "risk" in I.B.2.
IV.B.4.	9. Management review input Examine and summarize audit program results, trends, and changes in risk to provide input to management reviews. (Evaluate)	Added details to distinguish from IV.A.1. Mgmt support
	<b>B. Business and financial impact</b>	
IV.B.6.	1. Auditing as a management tool Use audit results to monitor continuous improvement, supplier management, customer satisfaction, etc., and to provide management with an independent view of the strategic plan's effectiveness and how well it is deployed . (Analyze)	
IV.B.3.	2. Interrelationships of business processes Identify how business units (receiving, product and process design, production, engineering, sales, marketing, field support, etc.) and multiple sites are interrelated, and recognize how their unique metrics and goals can be in conflict with one another. (Understand)	

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V.G.	3. Cost of quality (COQ) principles Identify, describe, and analyze the audit program's effect on the four COQ categories: prevention, appraisal, internal failure, external failure. (Analyze)	Moved from 'Quality Tools'
IV.B.7.	4. Emerging roles of the auditor Recognize new roles and responsibilities for auditors, such as being process consultants and facilitators who can help resolve internal issues, improve processes, and add value to the organization. (Understand)	Increased emphasis and detail
<b>V. Quality Tools and Techniques (26 Questions)</b>		<u>Increased</u> by 4 Questions
V.A. & V.B.	<b>A. Basic quality and problem-solving tools</b> Identify, interpret, and analyze: 1) Pareto charts, 2) cause and effect diagrams, 3) flowcharts, 4) statistical process control (SPC) charts, 5) check sheets, 6) scatter diagrams, 7) histograms, 8) root cause analysis, 9) plan-do-check-act (PDCA). (Analyze)	Moved problem-solving tools from V.B.
V.B.	<b>B. Process improvement techniques</b>	Added subtopics
V.B.	1. Six sigma Identify, interpret, and apply the six sigma DMAIC phases: define, measure, analyze, improve, control. (Apply)	
V.B.	2. Lean Identify, interpret, and apply lean tools: 5S, standard operations, kanban (pull), error-proofing, value-stream mapping, etc. (Apply)	
V.C.	<b>C. Basic statistics</b>	Expanded subtopics
V.C.	1. Measures of central tendency Identify, interpret, and use mean, median, and mode. (Apply)	
V.C.	2. Measures of dispersion Identify, interpret, and use standard deviation and frequency distribution. (Apply)	
V.F.	3. Qualitative and quantitative analysis Describe qualitative data in terms of the nature, type, or attribute of an observation or condition. Describe how quantitative data is used to detect patterns or trends and how such analysis can indicate whether a problem is systemic or isolated. (Understand)	
V.E.	<b>D. Process variation</b>	Revised from 'Process capability'
	1. Common and special cause Identify and distinguish between common and special cause variation. (Apply)	<b>New</b>
V.E.	2. Process performance metrics Describe elements of Cp and Cpk process capability studies (process centering and stability, specification limits, underlying distribution, etc.), and how these studies and other performance metrics are used in relation to established goals. (Understand)	Expanded description. Also candidates will <u>not</u> be tested on calculating measures of C <sub>p</sub> and C <sub>pk</sub> .
	3. Outliers	<b>New</b>



2004 BOK	2012 CQA BOK Details	New Elements in 2012 BOK
	Describe their significance and impact. (Understand)	
V.D.	<b>E. Sampling methods</b>	Expanded subtopics
V.D.	1. Acceptance sampling plans Identify and interpret these plans for attributes and variables data. (Understand)	
V.D.	2. Types of sampling Describe and distinguish between random, stratified, and cluster sampling, and identify the uses and potential problems of non-statistical sampling. (Understand)	
V.E.	3. Sampling terms Define related terms including consumer and producer risk, confidence level, etc. (Understand)	
IV.B.1.	<b>F. Change control and configuration management</b> Identify the principles of change control and configuration management systems as used in various applications: hardware, software (including security considerations), product, process, and service. (Understand)	
III.H.	<b>G. Verification and validation</b> Define, distinguish between, and use various methods of verifying and validating processes. (Analyze)	
IV.B.2.	<b>H. Risk management tools</b> Identify methods for managing risk, including risk avoidance, mitigation, tradeoffs, etc., and describe tools and methods for estimating and controlling risk: failure mode and effects analysis (FMEA), hazard analysis and critical control points (HACCP), critical to quality (CTQ) analysis, health hazard analysis (HHA), etc. (Understand) [Note: Organizational risk management is covered in BOK area IV.A.8.]	Added specific examples of risk control tools and methods.