# JavaScript

## 1. JavaScript Operators, Methods, and Keywords

**1.1 Complete and debug code that uses assignment and arithmetic operators**

- Assignment, increment, decrement, addition, subtraction, division, multiplication, modulus, compound assignment operators (+=, -=, *=, /=, %=)

**1.2 Apply JavaScript best practices**

- Comments, indentation, naming conventions, noscript, constants, reserved keywords, debugger keyword, setting breakpoints, console.log

**1.3 Evaluate the use of internal and external scripts**

- When to use, how to use, and what happens when scripts are used at multiple levels

**1.4 Implement exception handling**

- try, catch, finally

**1.5 Complete and debug code that interacts with the Browser Object Model (BOM)**

- Displaying dialogs, determining screen size

## 2. Variables, Data Types, and Functions

**2.1 Declare and use variables of primitive data types**

- Number, Boolean, String, null, undefined, type of operator, type-checking functions, use strict, converting between data types (parseInt, parseFloat), formatting numbers, string operations, eval(), toFixed(), toLocaleString(), toPrecision(), single quote vs. double quote (nesting), initialization

**2.2 Declare and use arrays**

- Single-dimensional arrays; multi-dimensional arrays; iteration; initialization; defining, sorting, and searching an array; push, pop, shift, and unshift methods; length property; accessing an array element

**2.3 Complete and debug code that uses objects**

- Properties, methods, instantiation, Date object, retrieving date and time parts, localizing date format (MM/DD vs DD/MM), adding and subtracting dates

**2.4 Complete and debug code that uses built-in Math functions**

- random, round, abs, floor, ceil, min, max, pow, sqrt

**2.5 Complete and debug functions that accept parameters and return values**

- Reusable code, local vs. global scope, redefining variables, passing parameters, value vs. reference, return values

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## 3. Decisions and Loops

**3.1   Evaluate expressions that use logical and comparison operators**

- !=, <, >, <=, >=, !, ==, &&, ||

**3.2   Complete and debug decision statements**

- Single alternative (if), dual alternative (if else), multiple alternative (switch), nested if

**3.3   Complete and debug loops**

- for, for in, while, do while, break, continue

## 4. Document Object Model

**4.1   Identify and construct the Document Object Model (DOM) tree**

- window, document, body, other HTML elements

**4.2   Identify and handle document, form, keyboard, and mouse events**

- onload, onfocus, onblur, onchange, onkeydown, onkeyup, onkeypress, onclick, onmouseover, onmouseout

**4.3   Complete and debug code that outputs to an HTML document**

- document.write, innerHTML, textContent

**4.4   Complete and debug code that locates, modifies, and adds HTML elements and attributes to documents**

- getElementById, getElementsByTagName, getElementsByClassName, setAttribute, createElement

**4.5   Create events using event handlers and listeners**

- DOM events, HTML attribute event, addEventListener

## 5. HTML Forms

**5.1   Complete and debug code that retrieves form input and sets form field values**

- Retrieving form values; identifying the DOM path; getting values from different types of elements; prepopulating, masking, and updating values

**5.2   Complete and debug code that performs input validation**

- Case, string comparisons, Not-A-Number (NaN), not blank

**5.3   Describe the form submission process**

- onsubmit, POST vs. GET, potential targets for submission

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# HTML and CSS

## 1. HTML Fundamentals

**1.1 Construct markup that uses metadata elements**

- script, noscript, style, link, meta tags (encoding, keywords, viewport, and description)

**1.2 Construct well-formed page markup**

- DOCTYPE declaration, html, head, body, proper syntax, closing tags and commonly used symbols

## 2. CSS Fundamentals

**2.1 Analyze and implement inline styles, internal (embedded) style sheets, and external style sheets**

- When to use inline styles, internal (embedded) style sheets, or external style sheets; precedence when using a combination of inline styles and style sheets

**2.2 Construct and analyze rule sets**

- Valid syntax for the CSS rule set, selectors (class, id, elements, and pseudo-class)

## 3. Document Structure using HTML

**3.1 Construct and analyze markup to structure content and organize data**

- Table tags (table, tr, th, td), h1-h6, p, br, hr, div, span, ul, ol, li

**3.2 Construct and analyze markup that uses HTML5 semantic elements**

- Semantic tags (header, nav, section, article, aside, footer, details, summary, figure, caption)

**3.3 Construct and analyze markup that implements navigation**

- target, anchor (a href), bookmark, relative vs. absolute links, navigating simple folder hierarchies, map, area

**3.4 Construct and analyze markup that uses form elements**

- Form attributes, action, method, submission methods, input types and restrictions, select, textarea, button, option, label

## 4. Multimedia Presentation using HTML

**4.1 Construct and analyze markup that displays images**

- img and picture elements and their attributes

**4.2 Construct and analyze markup that plays video and audio**

- video, audio, track, source, iframe

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## 5. Webpage Styling using CSS

**5.1 Construct and analyze styles that position content**

- Positioning (float, relative, absolute, static, and fixed) max-width, overflow, height, width, align, display, inline vs. block, visibility, box model, margins and padding

**5.2 Construct and analyze styles that format text**

- font-family, color, font-style, font-size, font-weight, font-variant, link colors, text formatting, text alignment, text decoration, indentation, line-height, word-wrap, and letter-spacing

**5.3 Construct and analyze styles that format backgrounds and borders**

- border-color, border-style, border-width, background properties, colors

**5.4 Construct and analyze styles that create a simple responsive layout**

- Units of measurement (percentages, pixels, em, vw, vh), viewport and media query, frameworks and templates, working with breakpoints, grids

## 6. Accessibility, Readability, and Testing

**6.1 Construct well-formed HTML and CSS markup that conforms to industry best practices**

- Reusing rules and rule sets, commenting, web-safe fonts, cross-platform usability, separation of structure (HTML) and style (CSS)

**6.2 Apply accessibility principles and evaluate content accessibility**

- Text alternatives, color contrast and usage, legibility of typography, tab order, text resizing, text hierarchy, translate

**6.3 Evaluate the structural integrity of HTML and CSS markup**

- Syntax errors, tag mismatch, cascading issues

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# Visual Design Using Adobe Photoshop CC 2019

Adobe conducted research to identify the foundational skills students need to effectively communicate using digital media tools. Based on feedback from educators, design professionals, businesses, and educational institutions around the world, the objectives cover entry-level skill expectations for visual design. An individual earning this certification has approximately 150 hours of instruction and hands-on experience with the product, and is familiar with product features and capabilities, as well as relevant career concepts.

Individuals who have earned an Adobe Certified Associate certification have demonstrated mastery of the following skills.

## 1. Working in the Design Industry

*This objective covers critical concepts related to working with colleagues and clients as well as crucial legal, technical, and design-related knowledge.*

**1.1 Identify the purpose, audience, and audience needs for preparing images.**

**1.1.a** Determine whether content is relevant to the purpose, audience, and audience needs.

 i. *Key Terms: client goals, target audience, demographics, accessibility, etc.*

**1.2 Communicate with colleagues and clients about design plans.**

**1.2.a** Demonstrate knowledge of techniques for communicating about design plans with peers and clients.

 i. *Key Terms: sketches, specifications, wireframes, prototypes, iterations, change orders, drafts, feedback loop, project scope, scope creep, etc.*

**1.2.b** Demonstrate knowledge of basic project management concepts.

**1.3 Determine the type of copyright, permissions, and licensing required to use specific content.**

**1.3.a** Identify legal and ethical considerations for using third-party content, such as copyright, permissions, and licensing.

 i. *Key Terms: Creative Commons, public domain, intellectual property, derivative work, commercial use, attribution, work for hire, fair use, fair dealing, etc.*

**1.3.b** Identify when and how to obtain permission to use images of people and locations.

 i. *Key Terms: model release, location release, etc.*

 ii. *Key Concepts: permission to use a photo is separate from permission to use a person's face or restricted location, etc.*

**1.4 Demonstrate knowledge of key terminology related to digital images.**

**1.4.a** Demonstrate knowledge of digital image terminology.

 i. *Key Terms: image resolution, image size, file types, pixel, raster, bitmap, vector, path, object, type, rasterizing, rendering, resampling, resizing, image size measured in pixels vs document size measured in inches/centimeters, etc.*

**1.4.b** Demonstrate knowledge of how color is created in digital images.

 i. *Key Terms: color mode, bit depth, gamut, CMYK vs. RGB vs. grayscale, etc.*

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**1.5** **Demonstrate knowledge of basic design principles and best practices employed in the design industry.**

**1.5.a** Communicate visually using the elements and principles of design and common design techniques.

   i. *Key Terms: space, line, shape, form, color, texture, emphasis/focal point, unity/harmony, variety, balance, alignment, proximity, repetition, rhythm, scale, movement, negative space, gestalt, etc.*

**1.5.b** Identify and use common typographic adjustments to create contrast, hierarchy, and enhanced readability/legibility.

   i. *Key Terms: font, size, style, color, alignment, kerning, tracking, leading, horizontal and vertical scale, line length, etc.*

**1.5.c** Demonstrate knowledge of common photographic/cinematic composition terms and principles

   i. *Key Terms: aspect ratio, rule of thirds, foreground, background, color, tone, contrast, cropping, depth of field, field of view, white balance, etc.*

## 2. Project Setup and Interface

*This objective covers the interface setup and program settings that assist in an efficient and effective workflow, as well as knowledge about ingesting digital assets for a project.*

**2.1** **Create a document with the appropriate settings for web, print, and video.**

**2.1.a** Set appropriate document settings for printed and onscreen images.

   i. *Key Concepts: width/height, orientation, artboards, resolution, color mode, bit depth, background, etc.*

**2.1.b** Create a new document preset to reuse for specific project needs.

**2.2** **Navigate, organize, and customize the application workspace.**

**2.2.a** Identify and manipulate elements of the Photoshop interface.

   i. *Key Concepts: Options bar, menus, panels, toolbar, artboards, etc.*

**2.2.b** Organize and customize the workspace.

   i. *Key Concepts: tabbed documents; showing, hiding, nesting, and docking panels; saving and resetting workspaces; shortcuts and menus; etc.*

**2.2.c** Configure application preferences.

   i. *Key Concepts: Units & Rulers; Guides, Grids & Slices; Performance; Scratch Disks; Interface; etc.*

**2.3** **Use non-printing design tools in the interface to aid in design or workflow.**

**2.3.a** Navigate a project.

   i. *Key Concepts: panning, zooming, rotating canvas, etc.*

**2.3.b** Use rulers.

   i. *Key Concepts: showing and hiding rulers, changing the measurement unit on rulers, etc.*

**2.3.c** Use guides and grids.

   i. *Key Concepts: adding/removing and locking/unlocking guides; setting color; showing/hiding guides and grids; using snap or align options; creating guide layouts; etc.*

**2.4** **Import assets into a project.**

**2.4.a** Open or import images from various devices.

   i. *Key Concepts: file, camera, scanner, etc.*

**2.4.b** Place assets in a Photoshop document.

   i. *Key Concepts: embedded, linked, copy and pasted, etc.*

**2.4.c** Use the Adobe Camera Raw interface to process images.

   i. *Key Concepts: importing raw files, but only at a fundamental level.*

**2.5  Manage colors, swatches, and gradients.**

    **2.5.a**  Set the active foreground and background color.

        *i.  Key Concepts: Color Picker, swatches, Eyedropper tool, hexadecimal value, etc.*

    **2.5.b**  Create and customize gradients.

        *i.  Key Concepts: Gradient panel, editing color and transparency stops, radial and elliptical gradients, etc.*

    **2.5.c**  Create and edit swatches.

**2.6  Manage brushes, symbols, styles, and patterns.**

    **2.6.a**  Open and browse libraries of included brushes, symbols, graphic styles, and patterns.

    **2.6.b**  Create and edit brushes, symbols, styles, and patterns.

## 3.  Organizing Documents

*This objective covers document structure such as layers, tracks, and managing document structure for efficient workflows.*

**3.1  Use layers to manage design elements.**

    **3.1.a**  Use the Layers panel to modify layers.

        *i.  Key Concepts: adding, deleting, hiding/showing, locking/unlocking, duplicating, and renaming layers, etc.*

    **3.1.b**  Manage layers in a complex project.

        *i.  Key Concepts: renaming layers, creating layer groups, deleting empty layers, keeping the Layers panel organized, etc.*

    **3.1.c**  Work with multiple layers.

        *i.  Key Concepts: selecting, grouping vs. linking, etc.*

    **3.1.d**  Flatten and merge layers.

        *i.  Key Concepts: tradeoffs with editability and file size, etc.*

    **3.1.e**  Recognize the different types of layers in the Layers panel.

        *i.  Key Concepts: background, regular, adjustment, type, fill, shape, vector, Smart Object, active/ inactive (hidden), artboard layers, etc.*

**3.2  Modify layer visibility using opacity, blending modes, and masks.**

    **3.2.a**  Adjust a layer's opacity, blending mode, and fill opacity.

    **3.2.b**  Create, apply, and manipulate masks.

        *i.  Key Concepts: layer masks, clipping masks, etc.*

**3.3  Understand the difference between destructive and nondestructive editing.**

    **3.3.a**  Nondestructive editing: Smart Objects, Smart Filters, and adjustment layers.

    **3.3.b**  Destructive editing: painting, adjustments, erasing, and rasterizing.

## 4.  Creating and Modifying Visual Elements

*This objective covers core tools and functionality of the application, as well as tools that affect the visual appearance of document elements.*

**4.1  Use core tools and features to create visual elements.**

    **4.1.a**  Create images using a variety of tools.

        *i.  Key Tools: drawing tools, painting tools, Pencil tool, Brush tool, vector shapes, etc.*

    **4.1.b**  Modify and edit vector images using a variety of vector tools.

        *i.  Key Tools: shape tools, vector selection tools, etc.*

**4.2 Add and manipulate text using appropriate typographic settings.**

**4.2.a** Use type tools to add typography to a design.

    *i. Key Tools: Type tool, Vertical Type tool, etc.*

**4.2.b** Adjust character settings in a design.

    *i. Key Concepts: using font, size, style, alignment, and color to enhance legibility, readability, hierarchy, etc.*

**4.2.c** Adjust paragraph settings in a design.

    *i. Key Settings: kerning, tracking, leading, horizontal and vertical scale, line length, etc.*

**4.2.d** Convert text to graphics.

    *i. Key Concepts: rasterizing type, etc.*

**4.3 Make, manage, and manipulate selections.**

**4.3.a** Make selections using a variety of tools.

    *i. Key Tools: Quick Selection, Lasso tool, Magic Wand, marquee selection tools, etc.*

**4.3.b** Modify and refine selections using various methods.

    *i. Key Concepts: keyboard modifiers, feather, expand, contract, inverse, selecting and masking, adding to and subtracting from selection, deselecting, etc.*

**4.3.c** Save and load selections.

**4.4 Transform digital graphics and media.**

**4.4.a** Modify the canvas or artboards.

    *i. Key Tools: resizing, cropping, expanding, resampling, etc.*

    *ii. Key Concepts: understanding the difference between resize and resample, etc.*

**4.4.b** Rotate, flip, and modify individual layers, objects, selections, groups, or graphical elements.

    *i. Key Concepts: transforming, warping, distorting, skewing, etc.*

**4.5 Use basic reconstructing and retouching techniques to manipulate digital graphics and media.**

**4.5.a** Apply basic auto-correction methods and tools.

**4.5.b** Use various tools to repair and reconstruct images.

    *i. Key Tools: healing tools, clone tools, Content-Aware tools, liquify, etc.*

**4.5.c** Evaluate or adjust the appearance of objects, selections, or layers using various tools.

    *i. Key Concepts: adjustments, adjustment layers, histogram, opacity, Eyedropper tool, etc.*

**4.5.d** Apply photographic changes to images using tools and adjustments.

    *i. Key Tools: Burn tool, Dodge tool, Smudge tool, Blur tool, Sharpen tool, Desaturate options, photo filters, etc.*

**4.6 Modify the appearance of design elements by using filters and styles.**

**4.6.a** Use filters to modify images destructively or non-destructively.

    *i. Key Concepts: Smart Filters vs filters, etc.*

**4.6.b** Apply, modify, copy, and remove layer styles.

**4.6.c** Create, manage, and save custom layer styles.

## 5. Publishing Digital Media

*This objective covers saving and exporting documents or assets within individual layers or selections.*

**5.1 Prepare images for export to web, print, and video.**

**5.1.a**   Check document for errors and project specifications.

    *i.  Key Concepts: setting color space, resolution, pixel dimensions, metadata, etc.*

**5.2  Export or save digital images to various file formats.**

**5.2.a**   Save in the native file format for Photoshop (.psd).

    *i.  Key Concepts: compatibility, saving as a copy, etc.*

**5.2.b**   Save in appropriate image formats for print or screen.

    *i.  Key Concepts: file format, bit depth, color space, resolution, pixel dimensions, etc.*

**5.2.c**   Export project elements.

    *i.  Key Concepts: exporting layers, exporting selections, exporting to files, exporting to libraries. etc.*

NOTE: All key items (Key Terms, Key Tools, Key Concepts, and Key Settings) are examples and not a comprehensive list. Changes in the industry or application may necessitate coverage of items not listed that apply to the Target Candidate description for the Adobe Certified Associate program.

# Entrepreneurial and Small Business

# Exam Objectives for ESB V.2

## Objective Domains

### 1. Entrepreneurial and Small Business Concepts

**1.1** **Identify the foundational concepts of entrepreneurship and small business ownership**

- 1.1.1 Define entrepreneurship and small business
- 1.1.2 Classify types of businesses
- 1.1.3 Identify various legal structures of a business
- 1.1.4 Identify roles and responsibilities within a business
- 1.1.5 Define business compensation structures
- 1.1.6 Define business life cycle stages
- 1.1.7 Identify elements of the design thinking process

**1.2** **Identify knowledge and skills of a successful entrepreneur**

- 1.2.1 Identify characteristics of an entrepreneurial mindset
- 1.2.2 Identify the risks, benefits, opportunities, and drawbacks of being an entrepreneur

**1.3** **Recognize potential business opportunities**

- 1.3.1 Identify characteristics of a business opportunity
- 1.3.2 Determine the viability of a business opportunity

**1.4** **Identify the elements of a business plan**

- 1.4.1 Identify the purposes and value of a business plan, pitch deck, and lean canvas
- 1.4.2 Define the key components of a business plan and pitch deck

**1.5** **Identify intellectual property concepts**

- 1.5.1 Differentiate between trademarks, trade secrets, copyrights, and patents
- 1.5.2 Identify the value, risks, and guidelines associated with using licensed materials

### 2. Marketing and Sales

**2.1** **Interpret market research**

- 2.1.1 Define target market, value proposition, and pricing
- 2.1.2 Distinguish between primary and secondary data
- 2.1.3 Evaluate competition
- 2.1.4 Complete a SWOT analysis

**2.2** **Analyze aspects of marketing processes**

- 2.2.1 Identify marketing platforms
- 2.2.2 Apply marketing methods
- 2.2.3 Analyze market reactions and sales data
- 2.2.4 Analyze customer acquisition costs and retention costs
- 2.2.5 Identify elements of a marketing plan

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**2.3    Identify sales channel strategies**

2.3.1    Identify elements of a sales process

2.3.2    Identify key characteristics of digital and physical sales channels

2.3.3    Define various types of sales channels

2.3.4    Identify the role of customer service and support in sales strategies

## 3.    Production and Distribution

**3.1    Identify the value of a Minimum Viable Product**

3.1.1    Define elements of product/market fit hypothesis

3.1.2    Define performance/quality criteria

**3.2    Identify supply chain and production processes**

3.2.1    Identify the knowledge and materials needed to create a product or service

3.2.2    Identify production options for digital and physical products and services

3.2.3    Identify quality control testing processes for digital and physical products and services, including adherence to government regulatory and safety requirements

**3.3    Identify distribution channels**

3.3.1    Identify types and factors in the selection of distribution channels

3.3.2    Identify differences between direct distribution and fulfillment services

## 4.    Business Financials

**4.1    Analyze business financials**

4.1.1    Determine the selling price of a product or service

4.1.2    Interpret basic financial statements such as income sheets and balance sheets

4.1.3    Differentiate between fixed and variable costs

4.1.4    Analyze a company's cash flow

4.1.5    Calculate the ROI of a product or service

**4.2    Analyze funding options**

4.2.1    Determine operating budget and start-up costs

4.2.2    Identify various funding options

4.2.3    Identify requirements for obtaining funding

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