

## Technical Requirements for Zaner-Bloser Online Materials (My ZB Portal)

### COMPUTER OR DEVICE

	Windows	MAC	iPad	Android tablet
CPU	Intel Core or later		iPad5 or higher	Qualcomm 8064 Quad-Core CPU (1.5 GHz) or higher
Memory	4G	4G	16G	16G
Network Card	100Mbit	100Mbit		
Screen Resolution	1280x800 or higher Millions of colors	1280x800 or higher Millions of colors		

### OPERATING SYSTEM

	Windows	MAC	iPad	Android
OS	Windows 8 or higher	macOS v 10.13.6 (High Sierra) or higher	iOS 11 or higher	6.0 (Marshmallow) or higher

**Chromebooks:** for your security, and to ensure that you can run our applications properly, we recommend that you use Chromebooks that have not reached [Auto Update Expiration](#).

### BROWSER

	Internet Explorer	Edge	FireFox	Safari	Chrome
Windows PC	11	42 or higher	68 or higher		76 or higher
Mac			68 or higher	11 or higher	76 or higher
iPad				11 or higher	76 or higher
Android					76 or higher

### Additional requirements

- Cookies and JavaScript enabled
- PDF reader such as Adobe Acrobat
- 3rd-party add-ons disabled (*note: some 3rd-party browser add-ons can cause issues*)
- HTTPS support enabled
- TLS 1.1 or higher

## Network Connectivity

### Bandwidth

- A broadband internet connection is required. Size will vary depending on number of concurrent users and content being accessed. We recommend a minimum of 5 MB dedicated.
- The recommended average for each computer or device:
  - 768 kbps/workstation or greater recommended
- Average, peak, and initial bandwidth requirements vary greatly depending on the product and the usage. No matter how fast the network connection between workstations and servers, if other bandwidth-intensive activities (VoIP, streaming video, audio downloads, database backups, etc.) are running on the network at the same time, program performance may suffer. For this reason, the use of packet-shaping techniques on heavily trafficked networks is recommended.

### Wireless

- Zaner-Bloser software operates over TCP/IP networks including wireless (802.11.a, g, n).
- Refer to your wireless access point's manufacturer-recommended device limits.

### Firewall & Content Filtering

- If you employ a centralized content filtering mechanism in your network, this can impact content load times. You should disable content filtering if possible from the following domains and IPs which are used to serve our Zaner-Bloser online materials:
  - 72.3.207.81
  - \*.myzbportal.com
  - fast.wistia.net (streaming video content)
- Content is delivered over both HTTP & HTTPS protocols on ports 80 and 443, respectively, and your firewall must allow packet delivery over those ports from the domains listed above.