

# System Requirements

## Recommended Hardware and Software

### Operating System

- Macintosh OS X 10.4.11 (Intel Only) or later
- Windows XP SP3
- Windows 7

### Memory

512 MB to 1 GB of RAM, based on OS version

### CPU

Dual Core or later (PPC Macs not supported)

### Screen

1024x768 resolution or higher

### Browsers

- Internet Explorer 8.x or 9.x  
(While we support IE9, we currently do not recommend its use.)
- Safari 4.x or 5.x
- Firefox 3.x or later

### Plug-ins

Adobe Reader or Adobe Acrobat 7 or later

### Required Browser Settings

- JavaScript: Enabled
- Pop-Up Blockers: Must be disabled for mathreasoninginventory.com
- Security Level Settings: Default settings supported; IE Maximum Security levels not supported
- Images Enabled: Default settings are supported; Image Display must not be turned off
- Privacy Settings: Default settings supported; Maximum Privacy Setting (disabling cookies) not supported

## Network and Bandwidth Requirements

### Connectivity

Network Interface Card supporting TCP/IP (wireless networks, including 802.11a, 802.11g, or 802.11n, are supported, but application performance may be limited by the network's bandwidth capacity)

### Bandwidth

We recommend an average of 100 kbps of bandwidth per active workstation, bearing in mind that average, peak, and initial bandwidth requirements vary greatly depending on the product and the teacher usage. For example, administering an assessment should not require much bandwidth, but loading complex pages with minimal filtering (e.g., loading the Assessments page for a very large class) may spike bandwidth requirements. Similarly, downloading a large data export will momentarily use significant bandwidth. Over a T3 connection (45 MB/s) this download may only require a few milliseconds, but over a T1 connection (1.5 MB/s) the network could be saturated for several seconds.

No matter how fast a network you have between workstation and server, if other bandwidth-intensive activities (VoIP, streaming video, audio downloads, database backups, etc.) are running anywhere on the network at the same time, performance on our site may suffer. For this reason, we recommend the use of packet shaping techniques on heavily trafficked networks.

Our site operates over TCP/IP networks including wireless (802.11.a, g, n). When employing a wireless network, it is important not to overload the access point with too many connections or a teacher session may be dropped. We recommend using an industry-standard switched network for optimal performance.

## More Information on Recommended Hardware

Districts using older workstations should consider the following factors:

- CPU clock speed is not a reliable indicator of relative performance. The slowest Intel® Core 2Duo is more powerful than the fastest Pentium® 4. A Core 2 Duo @ 2.13GHz is almost twice as fast as a P4 @ 2.8GHz. Workstations that run an Intel Pentium M, Pentium D, or Intel Celeron® must at minimum have a clock speed and RAM that are the same or greater than what is recommended for a Pentium 4.
- The following list provides general guidelines for determining whether your existing workstations are suitable for use:

### Faster processors that are fine regardless of CPU specifications

- Intel 2x Core 2 Extreme
- Intel Core i7
- Intel Core 2 Quad
- AMD Phenom
- Intel Core 2 Duo
- Dual-core Celeron 740
- Intel Pentium EE
- AMD Athlon II X2

### Processors needing a clock speed of ~2.8GHz or better

- Intel Atom (1.66GHz or better)
- AMD Athlon 64
- Pentium dual-core
- Intel Pentium D
- AMD Athlon X2
- Intel Pentium 4

### Slower processors not recommended regardless of CPU speed

- Intel Celeron
- Intel Pentium III
- AMD Athlon B
- AMD K6
- Intel Pentium M

GHz numbers are only comparable within a processor family. A 2.8GHz P4 is faster than a 2.0GHz P4, but a 1.8GHz Core 2 Duo is faster than either P4. In general, more cores mean faster, a larger L2 Cache means faster, and within a family higher clock speed (GHz) is faster.

### A Note Regarding Netbooks

In the past two years, netbooks (laptop-format miniature computers typically configured with an Intel Atom-class processor, Windows 7, Vista, or XP, reduced local storage, 1 GB of RAM and a small display) have been gaining in popularity. Some models of netbooks are able to run EE programs successfully. Other models are not compatible because of inadequate video speeds or screens not capable of displaying a minimum resolution of 1024x768.