

## Installation Sheet for Downloading and Installing PhETs

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### 1. Technical Requirements:

- The PhET simulations can be run online or downloaded to your computer.
- Link for checking System requirements for using PhET Simulations: <https://phet.colorado.edu/en/help-center/running-sims>

### 2. File Types

- The PhET simulations are available in HTML5 format and Java format
- The HTML5 files are browser-based, so after downloading they can be directly opened using any browser like Firefox or Chrome. Please install the latest version of Firefox/Chrome/Safari on your system.
- To open PhET simulations which are in Java format, you need to install Java installed on your system.

### 3. Procedure to check whether Java is installed on your system

- 3.1. To follow the installation procedure, you need to be connected to the Internet.
- 3.2. To check whether Java is installed on your system, do the following:
  - 3.2.1. Open the terminal.
    - 3.2.1.1. Procedure to open the terminal in Windows: Open the terminal by typing cmd in the search bar in the Start menu.
    - 3.2.1.2. Procedure to open terminal in Ubuntu: Press Ctrl, Alt and T keys simultaneously to open the terminal.
    - 3.2.1.3. Procedure to open terminal in Mac: In the Finder, open the /Applications/Utilities folder, then double-click Terminal.
  - 3.2.2. At the command prompt type, java -version and press Enter on your keyboard.
  - 3.2.3. It will show the version number of Java already installed on your system
  - 3.2.4. If **Java is not installed** on your system, please follow the procedure to install Java on Windows, Ubuntu and Mac given in **Section 4**.
  - 3.2.5. Please omit section 4 if Java is already installed on your system and proceed to **section 5**.

### 4. The Procedure Install Java

Java PhET simulations require java installed in the system. Java can be installed using the links given below.

#### 4.1. Procedure Install Java on Windows

- 4.1.1. Open any web browser and go to [Java.com](http://Java.com)
- 4.1.2. Click on the Java Download button.
- 4.1.3. A window prompts to accept the license agreement.
- 4.1.4. A window prompting to save the file appears. Click on the **Save File** button to download java.
- 4.1.5. The file downloads to the **Downloads** folder.
- 4.1.6. Right-click on the downloaded file and **Run as Administrator**.
- 4.1.7. Click **Yes** in the confirmation window.
- 4.1.8. The installation of Java starts. Click on the **Next** button and then Click on **OK** button to complete the installation

#### 4.2. Procedure Install Java on Linux OS

- 4.2.1. First, update the apt package index.
- 4.2.2. Open the terminal by pressing Ctrl, Alt and T keys simultaneously.

- 4.2.3. At the prompt type, `sudo apt update` and press Enter
- 4.2.4. Give the system password when prompted.
- 4.2.5. Once the package index is updated, at the prompt type `sudo apt install default-jdk` and press Enter
- 4.2.6. If prompted, type `y` and press Enter to continue.
- 4.2.7. To verify the installation:
- 4.2.8. Open the terminal by pressing Ctrl, Alt.
- 4.2.9. At the command prompt type, `java -version` and press Enter on your keyboard.
- 4.2.10. It will show the version number of Java installed on your system.

#### 4.3. Procedure to Install Java on Mac OS

- 4.3.1. Open any web browser and go to [Java.com](http://Java.com)
- 4.3.2. Click on the Java Download button.
- 4.3.3. Download Java for Mac OS X page opens. Read the license page. Click on Agree and Start Free Download button.
- 4.3.4. JRE.dmg file downloads to the Downloads folder. From either the browser Downloads window or from the file browser, double-click the .dmg file to launch it.
- 4.3.5. A Finder window appears that contains an icon of an open box and the name of the .app file.
- 4.3.6. Double-click the Java 10.app icon to start the installation application.
- 4.3.7. The installation application displays the Welcome window.
- 4.3.8. Click Open button. Give the system permission if prompted.
- 4.3.9. Click on the **Install** button in the Java installation window. The software is installed and a confirmation window is displayed. Click Close.
- 4.3.10. Verify the installation: Open the terminal.
  - 4.3.10.1.1.1. At the command prompt type, `java -version` and press Enter on your keyboard.
  - 4.3.10.1.1.2. It will show the version number of Java installed on your system.

#### 5. Procedure to use PhET Simulations in Online mode

- 5.1. Go to the URL: <https://phet.colorado.edu/en/simulations/browse>
- 5.2. The **Simulations** page opens. You will see two tabs in the middle of the page: **Browse** and **Filter**.
  - 5.2.1. Under the **Browse** tab simulations are arranged subject-wise.
  - 5.2.2. Under the **Filter** tab, uncheck the HTML5 option, the simulations can be selected using **Filters** on the left panel.
- 5.3. To use the simulation click desired **simulation thumbnail**. A new page with the simulation details opens.
- 5.4. To run the simulation click on the **play** icon on the player. The simulation interface opens and is now ready to use and explore.
- 5.5. Here there is also an option to download and save the simulation, to do so click on the **DOWNLOAD** button at the bottom-left of the simulation.

#### 6. Procedure to use PhET Simulations in Offline mode

- Offline Simulation can be downloaded and run only on **Windows OS** and **Mac OS**.
- The Offline download is currently not available for **Linux OS**. The required simulations can be directly downloaded from the **One at a Time** section, please click [here](#) .
- **Registration on the PhET website:** To download the offline content you need to register on the PhET website. If you are a first time user, please register by clicking on the **Sign in** icon present

at the top-right corner on the PhET homepage. **Sign In** dialog-box opens. Click on the **Register** link at the bottom of the dialog-box. Fill in the required details in the fields provided. You will receive an email with a link. Click on the link to confirm your registration. Use the registered email ID and password in the **Sign In** page while you are downloading the offline content.

## 6.1. Installation on Windows OS

- 6.1.1. Click [here](#) to download the offline PhET Simulations.
- 6.1.2. The offline access page opens.
- 6.1.3. On the page, you can see three options: **Desktop/Laptop Computer, Chrome book and iPad**
- 6.1.4. Click on **Desktop/Laptop Computer** option.
- 6.1.5. Under the **Full Install** section click on the **Windows** link.
- 6.1.6. **Sign in** window appears.
- 6.1.7. Please enter your registered email id and password. Click on **Sign In** button.
- 6.1.8. A window prompting to save the file appears.
- 6.1.9. In the window click on the **Save File** button.
- 6.1.10. The file downloads to the **Downloads** folder. The file size is around 202 MB.
- 6.1.11. After downloading, right-click on the downloaded file and select **Run as Administrator**.
- 6.1.12. Click **Yes** in the confirmation prompt box.
- 6.1.13. **Phet Set up** window opens showing the Installation process.
- 6.1.14. After the installation is complete the **Index of Sims** window opens with all the simulations.
- 6.1.15. A shortcut is created on the **Desktop** to open the **Index of Sims** window.
- 6.1.16. You can click on any simulation to work with.
- 6.1.17. In the **Index of Sims** window, we can see three tabs namely **HTML5** and **JAVA** and **All**.
- 6.1.18. The **HTML5** tab contains all the simulations in **HTML5** format.
- 6.1.19. The **JAVA** tab contains all the simulations in **Java** format
- 6.1.20. **ALL** tab contains all the simulations.

## 6.2. Installation on Mac OS

- 6.2.1. Click [here](#) to download the offline PhET Simulations.
- 6.2.2. The offline access page opens.
- 6.2.3. On the page, you can see three options: **Desktop/Laptop Computer, Chrome book and iPad**
- 6.2.4. Click on **Desktop/Laptop Computer** option.
- 6.2.5. Under the **Full Install** section click on the **MacOS** link.
- 6.2.6. **Sign in** window appears.
- 6.2.7. Please enter your registered email id and password. Click on the **Sign In** button.
- 6.2.8. The **phet-mac-app.dmg** file downloads to the Downloads folder ( The file is around 250 MB, please make sure you have enough storage space to save the file on your system.)
- 6.2.9. After the download is complete, double-click on the dmg file. The installation starts automatically. If required and prompted give appropriate permissions for installation.
- 6.2.10. The PhET 1.0.0 dialog-box opens which prompts you to transfer the file to the Applications folder.
- 6.2.11. Drag the PhET installer file and put in the Applications folder.
- 6.2.12. The PhET Simulations will now be accessible from the Applications folder.
- 6.2.13. Open the Applications folder and locate the PhET logo and double-click to open the file with simulations.

