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Resource ID#: 25754

Primary Type: Virtual Manipulative

**Direct Link:** <http://www.shodor.org/interactivate/activities/NormalDistribution/>

## Normal Distribution Interactive Activity

With this online tool, students adjust the standard deviation and sample size of a normal distribution to see how it will affect a histogram of that distribution. This activity allows students to explore the effect of changing the sample size in an experiment and the effect of changing the standard deviation of a normal distribution. Tabs at the top of the page provide access to supplemental materials, including background information about the topics covered, a description of how to use the application, and exploration questions for use with the java applet.

### General Information

**Subject(s):** Mathematics

**Grade Level(s):** 9, 10, 11, 12

**Intended Audience:** [Educators](#), [Students](#)

**Suggested Technology:** Computer for Presenter, Computers for Students, Internet Connection, Adobe Acrobat Reader, Java Plugin

**Freely Available:** Yes

**Keywords:** normal distribution, histogram, standard deviation, median

**Instructional Component Type(s):** [Virtual Manipulative](#), [Teaching Idea](#)

**Resource Collection:** CPALMS

### Additional Information/Instructions

**By Author/Submitter**

Teachers should first download the "Normal Distribution Exploration Questions" under the Instructor Tab to assist with the activity.

### Source and Access Information

**Contributed by:** Eboni Major

**Name of Author/Source:** Shodor

**Is this Resource freely Available?** Yes

**Access Privileges:** Public

**License:** [CPALMS License - no distribution - non commercial](#)

### Aligned Standards

Name	Description
	Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of

extreme data points (outliers). ★

[MAFS.912.S-ID.1.3:](#)

**Clarifications:**

In grades 6 – 8, students describe center and spread in a data distribution. Here they choose a summary statistic appropriate to the characteristics of the data distribution, such as the shape of the distribution or the existence of extreme data points.

[MAFS.912.S-ID.1.4:](#)

Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. ★