

Ohio Mathematics Correlation (Grade 10)

Reference: [Academic Content Standards \(PDF\)](#)

Introduction

This document correlates Yenka Mathematics software to the content performance indicators of the New York State mathematics core curriculum. It highlights specific areas of the curriculum that are covered by Yenka Mathematics and points to resources that will be useful when teaching the material.

The terminology we have used in this document is as follows:

- **Product:** this is the relevant Yenka Mathematics product, either [Yenka 3D Shapes](#) or [Yenka Statistics](#). More information about these products can be found on the Yenka web page by following the links.
- **Model:** a pre-made Yenka simulation with step-by-step instructions, which will either teach the pupils part of the curriculum, or give them opportunity to apply the knowledge they already have. These models are found under *Content* when you open Yenka itself, and they are linked to through our website.
- **Tutorial:** a model that explains how to use a particular aspect of the Yenka software. These can be found under *Getting Started* in the *Content* tab of Yenka.

Since the Yenka Mathematics titles are simulators, they will help you to cover other areas of the curriculum too. The final column of the table gives some possible *examples* of how you, or the students, can use Yenka Mathematics to create your own models and cover a wider scope of material. You may wish to look at the *tutorials*, and [training videos](#) provided on the website, to explore more of the potential uses of the software, and show you how to create your own models.



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Geometry and Spatial Sense Standard

Area	Indicator	Product	Content (Model)	Example
<i>Characteristics and Properties</i>	3. Make, test and establish the validity of conjectures about geometric properties and relationships using counterexample, inductive and deductive reasoning, and paragraph or two-column proof, including: <ol style="list-style-type: none"> prove the Pythagorean Theorem; prove theorems involving triangle similarity and congruence; prove theorems involving properties of lines, angles, triangles and quadrilaterals; test a conjecture using basic constructions made with a compass and straightedge or technology. 	Yenka 3D Shapes	- Similar triangles See also: - Similar cuboids - Find the similar triangle	Create a model with several <i>right-angled triangles</i> of different sizes, orientations etc. Ask students to use the length <i>Measurement tool</i> to determine the length of each of the sides of the triangle, and take them through the steps required to lead to Pythagorean Theorem. Repeat with non-right triangles to show that this does not hold for all triangles.
<i>Transformation and Symmetry</i>	9. Show and describe the results of combinations of translations, reflections and rotations (compositions); e.g., perform compositions and specify the result of a composition as the outcome of a single motion when applicable.	Yenka 3D Shapes		It is easy to perform translations, rotations and dilations on <i>2D</i> and <i>3D Shapes</i> (see tutorial Rotating and resizing shapes). This can help pupils visualise the result of compositions.

Data Analysis and Probability Standard

Area	Indicator	Product	Content (Model)	Example
<i>Data Collection</i>	1. Describe measures of center and the range verbally, graphically and algebraically.	Yenka Statistics	See related models: <ul style="list-style-type: none"> - Comparing averages - Calculating standard deviation - Comparing normal distributions 	

	2. Represent and analyze bivariate data using appropriate graphical displays (scatterplots, parallel box-and-whisker plots, histograms with more than one set of data, tables, charts, spreadsheets) with and without technology.	Yenka Statistics	<ul style="list-style-type: none"> - Correlation - Line of best fit - Extrapolation and interpolation 	
	4. Identify outliers on a data display; e.g., use interquartile range to identify outliers on a box-and-whisker plot.	Yenka Statistics		You can enter your own data set into an <i>Empty data set</i> , or import it from an Excel spreadsheet. The data set contains a <i>Summary tab</i> where students can look at details of quartiles, spread etc. A <i>box plot</i> can then be added to a model, and you can use this as the visual tool to teach students how to identify outliers, both in the data table and on the box-and-whisker plot.
<i>Statistical Methods</i>	6. Interpret the relationship between two variables using multiple graphical displays and statistical measures; e.g., scatterplots, parallel box-and-whisker plots, and measures of center and spread.	Yenka Statistics	<ul style="list-style-type: none"> - Calculating mean of grouped data - Correlation <p>See also tutorial:</p> <ul style="list-style-type: none"> - Viewing relationships in statistics 	
<i>Probability</i>	8. Differentiate and explain the relationship between the probability of an event and the odds of an event, and compute one given the other.	Yenka Statistics		Use the <i>probability tree</i> for a simple <i>probability game</i> of tossing a coin. Use this to explain to students that the probability of tossing heads is $\frac{1}{2}$, but the odds is 1:1. Ask the students to calculate the probability and odds for more complex examples.

If you have any questions about Yenka or this document, please contact [Esther Droop](#) or visit www.yenka.com