

# DesCartes (Combined)

---

**Subject: Mathematics**  
**Goal: Data Analysis and  
Probability**



Subject: Mathematics

Goal Strand: Data Analysis and Probability

RIT Score Range: Below 171

Skills and Concepts to Develop Below 171	Skills and Concepts to Introduce 171 - 180
<b>Data - Organize, Display, Interpret</b>	<b>Data - Organize, Display, Interpret</b>
<ul style="list-style-type: none"> <li>Solves simple problems based on data from tables*</li> </ul>	<ul style="list-style-type: none"> <li>Interprets simple graphs or tables</li> <li>Interprets data using tally charts</li> <li>Reads and interprets data from a pictograph*</li> <li>Solves simple problems based on data from pictographs</li> <li>Displays data appropriately - bar graph - scale is 1 to 1*</li> <li>Solves simple problems based on data from bar graphs</li> </ul>
<b>Data Analysis - Central Tendency and Range</b>	<b>Data Analysis - Central Tendency and Range</b>
<ul style="list-style-type: none"> <li>Compares data from simple graphs (e.g., largest, smallest, most often, least often)</li> </ul>	<ul style="list-style-type: none"> <li>Compares data from simple graphs (e.g., largest, smallest, most often, least often)</li> </ul>
<b>Basic Concepts of Probability</b>	<b>Basic Concepts of Probability</b>
	<ul style="list-style-type: none"> <li>Investigates probability of "more likely" or "less likely" using a table*</li> </ul>
<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>
<i>New Vocabulary: dollar, fewest, longest, shortest, table</i>	<i>New Vocabulary: fewer, less, quart, taller</i>
<i>New Signs and Symbols: \$ dollar sign, = is equal to</i>	<i>New Signs and Symbols: cm centimeter/centimetre, in. inch,   tally mark</i>

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 171 - 180**

Skills and Concepts to Enhance Below 171	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>Solves simple problems based on data from tables*</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>Interprets simple graphs or tables</li> <li>Interprets data using tally charts</li> <li>Reads and interprets data from a pictograph*</li> <li>Solves simple problems based on data from pictographs</li> <li>Displays data appropriately - bar graph - scale is 1 to 1*</li> <li>Solves simple problems based on data from bar graphs</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>Interprets simple graphs or tables</li> <li>Solves simple problems based on data from tally charts*</li> <li>Solves simple problems based on data from pictographs</li> <li>Reads and interprets data from a bar graph</li> <li>Solves simple problems based on data from bar graphs</li> </ul>
<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>Compares data from simple graphs (e.g., largest, smallest, most often, least often)</li> </ul>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>Compares data from simple graphs (e.g., largest, smallest, most often, least often)</li> </ul>	<p><b>Data Analysis - Central Tendency and Range</b></p>
<p><b>Basic Concepts of Probability</b></p>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>Investigates probability of "more likely" or "less likely" using a table*</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>Investigates probability of "more likely" or "less likely" using a spinner</li> <li>Investigates probability of "more likely" or "less likely" with objects hidden in containers*</li> </ul>
<p><b>Inferences, Predictions, Conclusions from Data</b></p>	<p><b>Inferences, Predictions, Conclusions from Data</b></p>	<p><b>Inferences, Predictions, Conclusions from Data</b></p>
<p><i>New Vocabulary:</i> dollar, fewest, longest, shortest, table</p>	<p><i>New Vocabulary:</i> fewer, less, quart, taller</p>	<p><i>New Vocabulary:</i> average, consecutive, lowest, most likely, most often, spinner</p>
<p><i>New Signs and Symbols:</i> \$ dollar sign, = is equal to</p>	<p><i>New Signs and Symbols:</i> cm centimeter/centimetre, in. inch,   tally mark</p>	<p><i>New Signs and Symbols:</i> none</p>

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 181 - 190**

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>• Interprets simple graphs or tables</li> <li>• Interprets data using tally charts</li> <li>• Reads and interprets data from a pictograph*</li> <li>• Solves simple problems based on data from pictographs</li> <li>• Displays data appropriately - bar graph - scale is 1 to 1*</li> <li>• Solves simple problems based on data from bar graphs</li> </ul>	<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>• Interprets simple graphs or tables</li> <li>• Solves simple problems based on data from tally charts*</li> <li>• Solves simple problems based on data from pictographs</li> <li>• Reads and interprets data from a bar graph</li> <li>• Solves simple problems based on data from bar graphs</li> </ul>	<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>• Solves problems using tables</li> <li>• Solves problems using tally charts*</li> <li>• Reads and interprets data from a bar graph</li> <li>• Reads and interprets dual bar graphs*</li> <li>• Reads and interprets simple line graphs</li> <li>• Reads and interprets data given in percent form on a circle graph*</li> </ul>
<b>Data Analysis - Central Tendency and Range</b> <ul style="list-style-type: none"> <li>• Compares data from simple graphs (e.g., largest, smallest, most often, least often)</li> </ul>	<b>Data Analysis - Central Tendency and Range</b>	<b>Data Analysis - Central Tendency and Range</b>
<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>• Investigates probability of "more likely" or "less likely" using a table*</li> </ul>	<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>• Investigates probability of "more likely" or "less likely" using a spinner</li> <li>• Investigates probability of "more likely" or "less likely" with objects hidden in containers*</li> </ul>	<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>• Investigates probability of "more likely" or "less likely" using a spinner</li> <li>• Investigates probability of "more likely" or "less likely" with a dart board*</li> </ul>
<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b> <ul style="list-style-type: none"> <li>• Draws conclusions from data - tally charts or frequency tables*</li> </ul>
<i>New Vocabulary:</i> fewer, less, quart, taller	<i>New Vocabulary:</i> average, consecutive, lowest, most likely, most often, spinner	<i>New Vocabulary:</i> line graph
<i>New Signs and Symbols:</i> cm centimeter/centimetre, in. inch,   tally mark	<i>New Signs and Symbols:</i> none	<i>New Signs and Symbols:</i> a.m., °F degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 191 - 200**

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Interprets simple graphs or tables</li> <li>• Solves simple problems based on data from tally charts*</li> <li>• Solves simple problems based on data from pictographs</li> <li>• Reads and interprets data from a bar graph</li> <li>• Solves simple problems based on data from bar graphs</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Solves problems using tables</li> <li>• Solves problems using tally charts*</li> <li>• Reads and interprets data from a bar graph</li> <li>• Reads and interprets dual bar graphs*</li> <li>• Reads and interprets simple line graphs</li> <li>• Reads and interprets data given in percent form on a circle graph*</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Reads and interprets tables*</li> <li>• Solves problems using tables</li> <li>• Understands how the omission or duplication of data affects the interpretation of results from a pictograph*</li> <li>• Organizes data to create simple bar graphs</li> <li>• Solves problems using bar graphs</li> <li>• Solves problems using dual bar graphs*</li> <li>• Solves problems using line graphs*</li> <li>• Displays data appropriately - simple circle graph - no calculations necessary*</li> <li>• Reads and interprets data given in percent form on a circle graph*</li> <li>• Interprets data given in circle graphs to solve simple problems (with percents)</li> <li>• Solves problems using Venn diagrams</li> </ul>
<p><b>Data Analysis - Central Tendency and Range</b></p>	<p><b>Data Analysis - Central Tendency and Range</b></p>	<p><b>Data Analysis - Central Tendency and Range</b></p>
<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Investigates probability of "more likely" or "less likely" using a spinner</li> <li>• Investigates probability of "more likely" or "less likely" with objects hidden in containers*</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Investigates probability of "more likely" or "less likely" using a spinner</li> <li>• Investigates probability of "more likely" or "less likely" with a dart board*</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Recognizes events that are certain, likely, unlikely, possible, or impossible*</li> <li>• Uses the concept of chance to determine the likelihood of an event*</li> <li>• Determines the probability for a simple experiment using one or more coins</li> <li>• Determines the probability for a simple experiment using objects - must determine size of sample space</li> </ul>
<p><b>Inferences, Predictions, Conclusions from Data</b></p>	<p><b>Inferences, Predictions, Conclusions from Data</b></p>	<p><b>Inferences, Predictions, Conclusions from Data</b></p>
	<ul style="list-style-type: none"> <li>• Draws conclusions from data - tally charts or frequency tables*</li> </ul>	<ul style="list-style-type: none"> <li>• Draws conclusions from data - bar graphs</li> <li>• Predicts from pictographs and bar graphs*</li> <li>• Predicts from simple charts and tables</li> </ul>
<p><i>New Vocabulary:</i> average, consecutive, lowest, most likely, most often, spinner</p>	<p><i>New Vocabulary:</i> line graph</p>	<p><i>New Vocabulary:</i> bar graph, below, chance, kilogram, less likely, maximum, probability, random, square mile</p>
<p><i>New Signs and Symbols:</i> none</p>	<p><i>New Signs and Symbols:</i> a.m., °F degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used</p>	<p><i>New Signs and Symbols:</i> ft feet, kg kilogram</p>

	with time	
--	-----------	--

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 201 - 210**

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Solves problems using tables</li> <li>• Solves problems using tally charts*</li> <li>• Reads and interprets data from a bar graph</li> <li>• Reads and interprets dual bar graphs*</li> <li>• Reads and interprets simple line graphs</li> <li>• Reads and interprets data given in percent form on a circle graph*</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Reads and interprets tables*</li> <li>• Solves problems using tables</li> <li>• Understands how the omission or duplication of data affects the interpretation of results from a pictograph*</li> <li>• Organizes data to create simple bar graphs</li> <li>• Solves problems using bar graphs</li> <li>• Solves problems using dual bar graphs*</li> <li>• Solves problems using line graphs*</li> <li>• Displays data appropriately - simple circle graph - no calculations necessary*</li> <li>• Reads and interprets data given in percent form on a circle graph*</li> <li>• Interprets data given in circle graphs to solve simple problems (with percents)</li> <li>• Solves problems using Venn diagrams</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Solves problems using pictographs*</li> <li>• Solves problems using bar graphs</li> <li>• Interprets data in line graphs (e.g., change over time)</li> <li>• Solves problems using line graphs*</li> <li>• Reads and interprets circle graphs*</li> <li>• Interprets data given in circle graphs to solve simple problems (with percents)</li> <li>• Solves problems using circle graphs*</li> <li>• Reads and interprets Venn diagrams</li> <li>• Reads and interprets data in scatter plots</li> <li>• Reads and interprets data in line plots*</li> </ul>
<p><b>Data Analysis - Central Tendency and Range</b></p>	<p><b>Data Analysis - Central Tendency and Range</b></p>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>• Determines the average (mean) of a simple set of data</li> <li>• Solves simple problems involving mean</li> </ul>
<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Investigates probability of "more likely" or "less likely" using a spinner</li> <li>• Investigates probability of "more likely" or "less likely" with a dart board*</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Recognizes events that are certain, likely, unlikely, possible, or impossible*</li> <li>• Uses the concept of chance to determine the likelihood of an event*</li> <li>• Determines the probability for a simple experiment using one or more coins</li> <li>• Determines the probability for a simple experiment using objects - must determine size of sample space</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Determines the probability for a simple experiment using one die</li> <li>• Determines probability from a real-world situation - number of possible outcomes given</li> <li>• Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space</li> <li>• Determines probability when drawing objects from containers - must determine size of sample space</li> <li>• Determines the complement of a simple event*</li> <li>• Determines the possible outcomes for a simple probability experiment using spinners</li> <li>• Solves problems involving permutations</li> <li>• Determines the number of possible combinations of given items</li> <li>• Predicts the sample space, based on the outcome of an</li> </ul>

		experiment - tally sheet* • Uses the results of probability experiments or events to predict future events*
<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>
<ul style="list-style-type: none"> <li>• Draws conclusions from data - tally charts or frequency tables*</li> </ul>	<ul style="list-style-type: none"> <li>• Draws conclusions from data - bar graphs</li> <li>• Predicts from pictographs and bar graphs*</li> <li>• Predicts from simple charts and tables</li> </ul>	<ul style="list-style-type: none"> <li>• Draws conclusions from data - charts*</li> <li>• Predicts from pictographs and bar graphs*</li> <li>• Predicts from plotted data*</li> </ul>
<i>New Vocabulary:</i> line graph	<i>New Vocabulary:</i> bar graph, below, chance, kilogram, less likely, maximum, probability, random, square mile	<i>New Vocabulary:</i> combinations, fastest, fitted line, likelihood, line of best fit, line plot, mean, number cube, outcome, positive linear relationship, prove, scatter plot, tails
<i>New Signs and Symbols:</i> a.m., °F degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time	<i>New Signs and Symbols:</i> ft feet, kg kilogram	<i>New Signs and Symbols:</i> { } set notation, ¢ cent sign, d distance, hr hour, t time

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 211 - 220**

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Reads and interprets tables*</li> <li>• Solves problems using tables</li> <li>• Understands how the omission or duplication of data affects the interpretation of results from a pictograph*</li> <li>• Organizes data to create simple bar graphs</li> <li>• Solves problems using bar graphs</li> <li>• Solves problems using dual bar graphs*</li> <li>• Solves problems using line graphs*</li> <li>• Displays data appropriately - simple circle graph - no calculations necessary*</li> <li>• Reads and interprets data given in percent form on a circle graph*</li> <li>• Interprets data given in circle graphs to solve simple problems (with percents)</li> <li>• Solves problems using Venn diagrams</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Solves problems using pictographs*</li> <li>• Solves problems using bar graphs</li> <li>• Interprets data in line graphs (e.g., change over time)</li> <li>• Solves problems using line graphs*</li> <li>• Reads and interprets circle graphs*</li> <li>• Interprets data given in circle graphs to solve simple problems (with percents)</li> <li>• Solves problems using circle graphs*</li> <li>• Reads and interprets Venn diagrams</li> <li>• Reads and interprets data in scatter plots</li> <li>• Reads and interprets data in line plots*</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Interprets data given in tables to solve problems</li> <li>• Interprets data given in circle graphs to solve complex problems (with percents)</li> <li>• Solves problems using circle graphs*</li> </ul>
<p><b>Data Analysis - Central Tendency and Range</b></p>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>• Determines the average (mean) of a simple set of data</li> <li>• Solves simple problems involving mean</li> </ul>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>• Determines the average (mean) of a simple set of data</li> <li>• Determines the mean of a complex set of data (e.g., fractions, integers, many data points)</li> <li>• Estimates the mean from a set of data*</li> <li>• Solves simple problems involving mean</li> <li>• Solves problems with missing data when the mean is known</li> <li>• Determines the middle value (median) from a simple set of data*</li> <li>• Determines the mode of a set of data</li> <li>• Explains rationale for determining the mean, median, or mode of a set of data*</li> </ul>
<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Recognizes events that are certain, likely, unlikely, possible, or impossible*</li> <li>• Uses the concept of chance to determine the likelihood of an event*</li> <li>• Determines the probability for a simple experiment using one or more coins</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Determines the probability for a simple experiment using one die</li> <li>• Determines probability from a real-world situation - number of possible outcomes given</li> <li>• Determines the probabilities for a simple experiment using a frequency table - must determine size of sample</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Determines likelihood using tree diagrams*</li> <li>• Determines probability - must determine size of sample space</li> <li>• Determines the complement of a simple event*</li> <li>• Determines the possible outcomes for a simple probability experiment using spinners</li> </ul>

<ul style="list-style-type: none"> <li>Determines the probability for a simple experiment using objects - must determine size of sample space</li> </ul>	<p>space</p> <ul style="list-style-type: none"> <li>Determines probability when drawing objects from containers - must determine size of sample space</li> <li>Determines the complement of a simple event*</li> <li>Determines the possible outcomes for a simple probability experiment using spinners</li> <li>Solves problems involving permutations</li> <li>Determines the number of possible combinations of given items</li> <li>Predicts the sample space, based on the outcome of an experiment - tally sheet*</li> <li>Uses the results of probability experiments or events to predict future events*</li> </ul>	<ul style="list-style-type: none"> <li>Determines the possible outcomes for a simple probability experiment using dart boards*</li> <li>Solves problems involving combinations</li> <li>Determines the number of possible combinations of given items</li> <li>Determines the outcome of simple multiple events*</li> <li>Uses previous results to predict future events*</li> </ul>
<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>
<ul style="list-style-type: none"> <li>Draws conclusions from data - bar graphs</li> <li>Predicts from pictographs and bar graphs*</li> <li>Predicts from simple charts and tables</li> </ul>	<ul style="list-style-type: none"> <li>Draws conclusions from data - charts*</li> <li>Predicts from pictographs and bar graphs*</li> <li>Predicts from plotted data*</li> </ul>	<ul style="list-style-type: none"> <li>Draws conclusions from data - charts*</li> <li>Predicts from line graphs*</li> <li>Predicts from plotted data*</li> </ul>
<i>New Vocabulary:</i> bar graph, below, chance, kilogram, less likely, maximum, probability, random, square mile	<i>New Vocabulary:</i> combinations, fastest, fitted line, likelihood, line of best fit, line plot, mean, number cube, outcome, positive linear relationship, prove, scatter plot, tails	<i>New Vocabulary:</i> frequency table, median, mode
<i>New Signs and Symbols:</i> ft feet, kg kilogram	<i>New Signs and Symbols:</i> { } set notation, ¢ cent sign, d distance, hr hour, τ time	<i>New Signs and Symbols:</i> h hour (SI metric), – negative number, oz ounce, P( ) probability, s second (SI metric)

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 221 - 230**

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>Solves problems using pictographs*</li> <li>Solves problems using bar graphs</li> <li>Interprets data in line graphs (e.g., change over time)</li> <li>Solves problems using line graphs*</li> <li>Reads and interprets circle graphs*</li> <li>Interprets data given in circle graphs to solve simple problems (with percents)</li> <li>Solves problems using circle graphs*</li> <li>Reads and interprets Venn diagrams</li> <li>Reads and interprets data in scatter plots</li> <li>Reads and interprets data in line plots*</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>Interprets data given in tables to solve problems</li> <li>Interprets data given in circle graphs to solve complex problems (with percents)</li> <li>Solves problems using circle graphs*</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>Organizes data using tables*</li> <li>Interprets data given in tables to solve problems</li> <li>Determines appropriate intervals and/or scale for a bar graph*</li> <li>Interprets data given in horizontal and vertical bar graphs to solve problems</li> <li>Interprets data given in line graphs to solve problems*</li> <li>Interprets data given in circle graphs to solve complex problems (with percents)</li> <li>Reads and interprets data in box-and-whisker plots</li> </ul>
<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>Determines the average (mean) of a simple set of data</li> <li>Solves simple problems involving mean</li> </ul>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>Determines the average (mean) of a simple set of data</li> <li>Determines the mean of a complex set of data (e.g., fractions, integers, many data points)</li> <li>Estimates the mean from a set of data*</li> <li>Solves simple problems involving mean</li> <li>Solves problems with missing data when the mean is known</li> <li>Determines the middle value (median) from a simple set of data*</li> <li>Determines the mode of a set of data</li> <li>Explains rationale for determining the mean, median, or mode of a set of data*</li> </ul>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>Determines the mean of a complex set of data (e.g., fractions, integers, many data points)</li> <li>Estimates the mean from a set of data*</li> <li>Solves problems with missing data when the mean is known</li> <li>Determines the median from a complex set of data (e.g., not in order, many data points)</li> <li>Determines the range of a complex set of data</li> <li>Identifies outliers on a data display (e.g., uses interquartile range to identify outliers on a box-and-whisker plot)*</li> </ul>
<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>Determines the probability for a simple experiment using one die</li> <li>Determines probability from a real-world situation - number of possible outcomes given</li> <li>Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space</li> <li>Determines probability when drawing objects from containers - must determine size of sample space</li> <li>Determines the complement of a simple event*</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>Determines likelihood using tree diagrams*</li> <li>Determines probability - must determine size of sample space</li> <li>Determines the complement of a simple event*</li> <li>Determines the possible outcomes for a simple probability experiment using spinners</li> <li>Determines the possible outcomes for a simple probability experiment using dart boards*</li> <li>Solves problems involving combinations</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>Determines certainty from a set data*</li> <li>Determines probability - must determine size of sample space</li> <li>Modifies sample space to change the probability of an event*</li> <li>Determines the probability of independent simple compound events</li> <li>Determines the complement of a complex event*</li> </ul>

<ul style="list-style-type: none"> <li>• Determines the possible outcomes for a simple probability experiment using spinners</li> <li>• Solves problems involving permutations</li> <li>• Determines the number of possible combinations of given items</li> <li>• Predicts the sample space, based on the outcome of an experiment - tally sheet*</li> <li>• Uses the results of probability experiments or events to predict future events*</li> </ul>	<ul style="list-style-type: none"> <li>• Determines the number of possible combinations of given items</li> <li>• Determines the outcome of simple multiple events*</li> <li>• Uses previous results to predict future events*</li> </ul>	
<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>
<ul style="list-style-type: none"> <li>• Draws conclusions from data - charts*</li> <li>• Predicts from pictographs and bar graphs*</li> <li>• Predicts from plotted data*</li> </ul>	<ul style="list-style-type: none"> <li>• Draws conclusions from data - charts*</li> <li>• Predicts from line graphs*</li> <li>• Predicts from plotted data*</li> </ul>	<ul style="list-style-type: none"> <li>• Estimates line of best fit to make predictions</li> <li>• Predicts from an analysis of data and statistical measures*</li> <li>• Predicts from charts and tables</li> </ul>
<i>New Vocabulary:</i> combinations, fastest, fitted line, likelihood, line of best fit, line plot, mean, number cube, outcome, positive linear relationship, prove, scatter plot, tails	<i>New Vocabulary:</i> frequency table, median, mode	<i>New Vocabulary:</i> average salary, box-and-whisker plot, data point, interquartile range, lower quartile, meters per minute, middle, outlier, percentile, quartile, sample, successive, upper quartile
<i>New Signs and Symbols:</i> { } set notation, ¢ cent sign, d distance, hr hour, t time	<i>New Signs and Symbols:</i> h hour (SI metric), – negative number, oz ounce, P( ) probability, s second (SI metric)	<i>New Signs and Symbols:</i> ( ) ordered pair, \$ dollar sign, °C degrees Celsius, m meter/metre, mL milliliter/millilitre, ? next in sequence, • outlier

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 231 - 240**

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Interprets data given in tables to solve problems</li> <li>• Interprets data given in circle graphs to solve complex problems (with percents)</li> <li>• Solves problems using circle graphs*</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Organizes data using tables*</li> <li>• Interprets data given in tables to solve problems</li> <li>• Determines appropriate intervals and/or scale for a bar graph*</li> <li>• Interprets data given in horizontal and vertical bar graphs to solve problems</li> <li>• Interprets data given in line graphs to solve problems*</li> <li>• Interprets data given in circle graphs to solve complex problems (with percents)</li> <li>• Reads and interprets data in box-and-whisker plots</li> </ul>	<p><b>Data - Organize, Display, Interpret</b></p> <ul style="list-style-type: none"> <li>• Reads and interprets data in tables</li> <li>• Reads and interprets data in box-and-whisker plots</li> <li>• Reads and interprets data in stem-and-leaf plots</li> </ul>
<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>• Determines the average (mean) of a simple set of data</li> <li>• Determines the mean of a complex set of data (e.g., fractions, integers, many data points)</li> <li>• Estimates the mean from a set of data*</li> <li>• Solves simple problems involving mean</li> <li>• Solves problems with missing data when the mean is known</li> <li>• Determines the middle value (median) from a simple set of data*</li> <li>• Determines the mode of a set of data</li> <li>• Explains rationale for determining the mean, median, or mode of a set of data*</li> </ul>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>• Determines the mean of a complex set of data (e.g., fractions, integers, many data points)</li> <li>• Estimates the mean from a set of data*</li> <li>• Solves problems with missing data when the mean is known</li> <li>• Determines the median from a complex set of data (e.g., not in order, many data points)</li> <li>• Determines the range of a complex set of data</li> <li>• Identifies outliers on a data display (e.g., uses interquartile range to identify outliers on a box-and-whisker plot)*</li> </ul>	<p><b>Data Analysis - Central Tendency and Range</b></p> <ul style="list-style-type: none"> <li>• Determines the range of a complex set of data</li> <li>• Identifies a set of data with a given mean, median, and/or mode*</li> </ul>
<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Determines likelihood using tree diagrams*</li> <li>• Determines probability - must determine size of sample space</li> <li>• Determines the complement of a simple event*</li> <li>• Determines the possible outcomes for a simple probability experiment using spinners</li> <li>• Determines the possible outcomes for a simple probability experiment using dart boards*</li> <li>• Solves problems involving combinations</li> <li>• Determines the number of possible combinations of given items</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Determines certainty from a set data*</li> <li>• Determines probability - must determine size of sample space</li> <li>• Modifies sample space to change the probability of an event*</li> <li>• Determines the probability of independent simple compound events</li> <li>• Determines the complement of a complex event*</li> </ul>	<p><b>Basic Concepts of Probability</b></p> <ul style="list-style-type: none"> <li>• Determines certainty from a set data*</li> <li>• Determines probability using counting procedures*</li> <li>• Determines probability using tables</li> <li>• Determines the complement of a complex event*</li> <li>• Determines probability using an area model</li> <li>• Uses multiplication principle of counting to determine possibilities</li> <li>• Uses counting procedures to determine possibilities*</li> <li>• Uses theoretical probability to predict future events</li> </ul>

<ul style="list-style-type: none"> <li>• Determines the outcome of simple multiple events*</li> <li>• Uses previous results to predict future events*</li> </ul>		
<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>
<ul style="list-style-type: none"> <li>• Draws conclusions from data - charts*</li> <li>• Predicts from line graphs*</li> <li>• Predicts from plotted data*</li> </ul>	<ul style="list-style-type: none"> <li>• Estimates line of best fit to make predictions</li> <li>• Predicts from an analysis of data and statistical measures*</li> <li>• Predicts from charts and tables</li> </ul>	<ul style="list-style-type: none"> <li>• Determines the correlation for a set of data*</li> <li>• Predicts from an analysis of data and statistical measures*</li> </ul>
<i>New Vocabulary:</i> frequency table, median, mode	<i>New Vocabulary:</i> average salary, box-and-whisker plot, data point, interquartile range, lower quartile, meters per minute, middle, outlier, percentile, quartile, sample, successive, upper quartile	<i>New Vocabulary:</i> correlation, hyperbolic, mileage table, stem and leaf plot
<i>New Signs and Symbols:</i> h hour (SI metric), - negative number, oz ounce, P( ) probability, s second (SI metric)	<i>New Signs and Symbols:</i> ( ) ordered pair, \$ dollar sign, °C degrees Celsius, m meter/metre, mL milliliter/millilitre, ? next in sequence, • outlier	<i>New Signs and Symbols:</i> ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 241 - 250**

<b>Skills and Concepts to Enhance 231 - 240</b>	<b>Skills and Concepts to Develop 241 - 250</b>	<b>Skills and Concepts to Introduce 251 - 260</b>
<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>Organizes data using tables*</li> <li>Interprets data given in tables to solve problems</li> <li>Determines appropriate intervals and/or scale for a bar graph*</li> <li>Interprets data given in horizontal and vertical bar graphs to solve problems</li> <li>Interprets data given in line graphs to solve problems*</li> <li>Interprets data given in circle graphs to solve complex problems (with percents)</li> <li>Reads and interprets data in box-and-whisker plots</li> </ul>	<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>Reads and interprets data in tables</li> <li>Reads and interprets data in box-and-whisker plots</li> <li>Reads and interprets data in stem-and-leaf plots</li> </ul>	<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>Displays data appropriately - circle graph - calculations necessary*</li> </ul>
<b>Data Analysis - Central Tendency and Range</b> <ul style="list-style-type: none"> <li>Determines the mean of a complex set of data (e.g., fractions, integers, many data points)</li> <li>Estimates the mean from a set of data*</li> <li>Solves problems with missing data when the mean is known</li> <li>Determines the median from a complex set of data (e.g., not in order, many data points)</li> <li>Determines the range of a complex set of data</li> <li>Identifies outliers on a data display (e.g., uses interquartile range to identify outliers on a box-and-whisker plot)*</li> </ul>	<b>Data Analysis - Central Tendency and Range</b> <ul style="list-style-type: none"> <li>Determines the range of a complex set of data</li> <li>Identifies a set of data with a given mean, median, and/or mode*</li> </ul>	<b>Data Analysis - Central Tendency and Range</b> <ul style="list-style-type: none"> <li>Solves complex problems involving mean*</li> <li>Computes and compares mean, median, mode, and range in simple examples to demonstrate that they may differ for a given set of data*</li> <li>Evaluates how adding data to a set of data affects the measures of center*</li> </ul>
<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>Determines certainty from a set data*</li> <li>Determines probability - must determine size of sample space</li> <li>Modifies sample space to change the probability of an event*</li> <li>Determines the probability of independent simple compound events</li> <li>Determines the complement of a complex event*</li> </ul>	<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>Determines certainty from a set data*</li> <li>Determines probability using counting procedures*</li> <li>Determines probability using tables</li> <li>Determines the complement of a complex event*</li> <li>Determines probability using an area model</li> <li>Uses multiplication principle of counting to determine possibilities</li> <li>Uses counting procedures to determine possibilities*</li> <li>Uses theoretical probability to predict future events</li> </ul>	<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>Determines certainty from a set data*</li> <li>Determines the probabilities of complex compound events (independent)*</li> </ul>
<b>Inferences, Predictions, Conclusions from Data</b> <ul style="list-style-type: none"> <li>Estimates line of best fit to make predictions</li> </ul>	<b>Inferences, Predictions, Conclusions from Data</b> <ul style="list-style-type: none"> <li>Determines the correlation for a set of data*</li> </ul>	<b>Inferences, Predictions, Conclusions from Data</b> <ul style="list-style-type: none"> <li>Uses the regression line method to make predictions*</li> </ul>

<ul style="list-style-type: none"> <li>• Predicts from an analysis of data and statistical measures*</li> <li>• Predicts from charts and tables</li> </ul>	<ul style="list-style-type: none"> <li>• Predicts from an analysis of data and statistical measures*</li> </ul>	
<i>New Vocabulary:</i> average salary, box-and-whisker plot, data point, interquartile range, lower quartile, meters per minute, middle, outlier, percentile, quartile, sample, successive, upper quartile	<i>New Vocabulary:</i> correlation, hyperbolic, mileage table, stem and leaf plot	<i>New Vocabulary:</i> none
<i>New Signs and Symbols:</i> ( ) ordered pair, \$ dollar sign, °C degrees Celsius, m meter/metre, mL milliliter/millilitre, ? next in sequence, • outlier	<i>New Signs and Symbols:</i> ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west	<i>New Signs and Symbols:</i> + addition

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: 251 - 260**

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop 251 - 260	Skills and Concepts to Introduce Above 260
<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>• Reads and interprets data in tables</li> <li>• Reads and interprets data in box-and-whisker plots</li> <li>• Reads and interprets data in stem-and-leaf plots</li> </ul>	<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>• Displays data appropriately - circle graph - calculations necessary*</li> </ul>	<b>Data - Organize, Display, Interpret</b> <ul style="list-style-type: none"> <li>• Reads and interprets interquartile range in box-and-whisker plots*</li> </ul>
<b>Data Analysis - Central Tendency and Range</b> <ul style="list-style-type: none"> <li>• Determines the range of a complex set of data</li> <li>• Identifies a set of data with a given mean, median, and/or mode*</li> </ul>	<b>Data Analysis - Central Tendency and Range</b> <ul style="list-style-type: none"> <li>• Solves complex problems involving mean*</li> <li>• Computes and compares mean, median, mode, and range in simple examples to demonstrate that they may differ for a given set of data*</li> <li>• Evaluates how adding data to a set of data affects the measures of center*</li> </ul>	<b>Data Analysis - Central Tendency and Range</b>
<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>• Determines certainty from a set data*</li> <li>• Determines probability using counting procedures*</li> <li>• Determines probability using tables</li> <li>• Determines the complement of a complex event*</li> <li>• Determines probability using an area model</li> <li>• Uses multiplication principle of counting to determine possibilities</li> <li>• Uses counting procedures to determine possibilities*</li> <li>• Uses theoretical probability to predict future events</li> </ul>	<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>• Determines certainty from a set data*</li> <li>• Determines the probabilities of complex compound events (independent)*</li> </ul>	<b>Basic Concepts of Probability</b> <ul style="list-style-type: none"> <li>• Determines the probabilities of compound events (dependent)</li> </ul>
<b>Inferences, Predictions, Conclusions from Data</b> <ul style="list-style-type: none"> <li>• Determines the correlation for a set of data*</li> <li>• Predicts from an analysis of data and statistical measures*</li> </ul>	<b>Inferences, Predictions, Conclusions from Data</b> <ul style="list-style-type: none"> <li>• Uses the regression line method to make predictions*</li> </ul>	<b>Inferences, Predictions, Conclusions from Data</b>
<i>New Vocabulary:</i> correlation, hyperbolic, mileage table, stem and leaf plot	<i>New Vocabulary:</i> none	<i>New Vocabulary:</i> none
<i>New Signs and Symbols:</i> ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west	<i>New Signs and Symbols:</i> + addition	<i>New Signs and Symbols:</i> none

**Subject: Mathematics**

**Goal Strand: Data Analysis and Probability**

**RIT Score Range: Above 260**

Skills and Concepts to Enhance 251 - 260	Skills and Concepts to Develop Above 260
<b>Data - Organize, Display, Interpret</b>	<b>Data - Organize, Display, Interpret</b>
<ul style="list-style-type: none"> <li>Displays data appropriately - circle graph - calculations necessary*</li> </ul>	<ul style="list-style-type: none"> <li>Reads and interprets interquartile range in box-and-whisker plots*</li> </ul>
<b>Data Analysis - Central Tendency and Range</b>	<b>Data Analysis - Central Tendency and Range</b>
<ul style="list-style-type: none"> <li>Solves complex problems involving mean*</li> <li>Computes and compares mean, median, mode, and range in simple examples to demonstrate that they may differ for a given set of data*</li> <li>Evaluates how adding data to a set of data affects the measures of center*</li> </ul>	
<b>Basic Concepts of Probability</b>	<b>Basic Concepts of Probability</b>
<ul style="list-style-type: none"> <li>Determines certainty from a set data*</li> <li>Determines the probabilities of complex compound events (independent)*</li> </ul>	<ul style="list-style-type: none"> <li>Determines the probabilities of compound events (dependent)</li> </ul>
<b>Inferences, Predictions, Conclusions from Data</b>	<b>Inferences, Predictions, Conclusions from Data</b>
<ul style="list-style-type: none"> <li>Uses the regression line method to make predictions*</li> </ul>	
<i>New Vocabulary: none</i>	<i>New Vocabulary: none</i>
<i>New Signs and Symbols: + addition</i>	<i>New Signs and Symbols: none</i>