

**Hardin County Schools Combined Curriculum Guide
Mathematics -- Fourth Grade – Data Analysis and Probability
DRAFT**

Big Idea	DATA ANALYSIS AND PROBABILITY			
Academic Expectations	2.7 Students understand number concepts and use numbers appropriately and accurately. 2.8 Students understand various mathematical procedures and use them appropriately and accurately. 2.13 Students understand and appropriately use statistics and probability.			
POS Understandings	MA-4-DAP-U-1 Students will understand that quantitative literacy is a necessary tool to be an intelligent consumer and citizen.		9 Weeks Taught	1 2 3 4
POS Skills & Concepts	Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary
MA-4-DAP-S-DR4 Students will analyze and make inferences from data displays (e.g., drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs, line plots, Venn diagrams).				
Strategies & Activities		Resources	Common Assessments	
		Essential Questions	Higher Order Questions	

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POS Understandings	MA-4-DAP-U-2 Students will understand that the collection, organization, interpretation and display of data can be used to answer questions.		9 Weeks Taught	1	2	3	4					
POS Skills & Concepts	Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary								
<p>MA-4-DAP-S-DR1 Students will explore line graphs to show change over time.</p> <p>MA-4-DAP-S-DR2 Students will display, read and compare data on student-generated graphs.</p> <p>MA-4-DAP-S-DR3 Students will pose questions and choose an appropriate method to collect, organize and display student-collected data to answer the questions.</p> <p>MA-4-DAP-S-DR5 Students will construct data displays (e.g., pictographs, bar graphs, line plots, Venn diagrams, tables).</p> <p>MA-4-DAP-S-CD2 Students will develop the meaning and interpretation of the median, mode and range of a set of data.</p> <p>MA-4-DAP-S-CD3 Students will determine the median, mode and range of a set of data.</p> <p>MA-4-DAP-S-CD4 Students will compare two sets of data.</p> <p>MA-4-DAP-S-ES1 Students will pose questions and collect, organize, interpret and display data to answer them.</p>		<p>MA-04-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs, line plots, Venn diagrams). DOK 3</p> <p><i>MA-04-4.1.2</i> <i>Students will collect data.</i></p> <p>MA-04-4.1.3 Students will construct data displays (pictographs, bar graphs, line plots, Venn diagrams, tables). DOK 2</p>	<p>I can interpret and make predictions from drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs, line plots, Venn diagrams.</p> <p>I can collect data for data display.</p> <p>I can construct pictographs, bar graphs, line plots, Venn diagrams, tables.</p> <p>I can choose the appropriate graph to represent the data collected.</p>	Table	Chart	Tally table	Pictograph	Bar graph	Circle/pie graph	Line plot	Venn diagram	Data

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Strategies & Activities	Resources	Common Assessments
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POS Understandings	MA-4-DAP-U-3 Students will understand that the choice of data display can affect the visual message communicated.			9 Weeks Taught	1	2	3	4
POS Skills & Concepts	Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary				
MA-4-DAP-S-DR5 Students will construct data displays (e.g., pictographs, bar graphs, line plots, Venn diagrams, tables).								
Strategies & Activities		Resources	Common Assessments					
		Essential Questions <td colspan="4" style="background-color: #cccccc;">Higher Order Questions</td>			Higher Order Questions			

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POS Understandings		MA-4-DAP-U-4 Students will understand that inferences and predictions from data are used to make critical and informed decisions.		9 Weeks Taught	1	2	3	4
POS Skills & Concepts		Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary			
<p>MA-4-DAP-S-DR4 Students will analyze and make inferences from data displays (e.g., drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs, line plots, Venn diagrams).</p> <p>MA-4-DAP-S-CD1 Students will draw conclusions based on data.</p> <p>MA-4-DAP-S-P1 Students will use a variety of appropriate manipulatives, graphics or symbols to determine the fairness of games and make predictions from the outcomes of simple probability experiments.</p> <p>MA-4-DAP-S-P2 Students will determine the likelihood of an event, expressed as a fraction.</p> <p>MA-4-DAP-S-P3 Students will describe and give examples of the probability of an unlikely event and a likely event.</p> <p>MA-4-DAP-S-P4 Students will use counting techniques and/or tables to explore probability experiments.</p> <p>MA-4-DAP-S-P5 Students will determine all possible outcomes of an activity with up to 12 possible outcomes.</p>			<p><i>MA-04-4.2.1</i> <i>Students will determine the median, mode (for a data set with no more than one mode) and range of a set of data.</i></p> <p><i>MA-04-4.3.1</i> <i>Students will pose questions that can be answered by collecting data.</i></p>	<p>I can calculate the median, mode and range for a set of data.</p> <p>I can create questions that can be answered by collecting data.</p>	<p>Median Mode Range</p>			
Strategies & Activities			Resources	Common Assessments				
			Essential Questions	Higher Order Questions				

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POS Understandings	MA-4-DAP-U-5 Students will understand that probability can be used to make decisions or predictions or to draw conclusions.		9 Weeks Taught	1	2	3	4						
POS Skills & Concepts	Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary									
<p>MA-4-DAP-S-P1 Students will use a variety of appropriate manipulatives, graphics or symbols to determine the fairness of games and make predictions from the outcomes of simple probability experiments.</p> <p>MA-4-DAP-S-P2 Students will determine the likelihood of an event, expressed as a fraction.</p> <p>MA-4-DAP-S-P3 Students will describe and give examples of the probability of an unlikely event and a likely event.</p> <p>MA-4-DAP-S-P4 Students will use counting techniques and/or tables to explore probability experiments.</p> <p>MA-4-DAP-S-P5 Students will determine all possible outcomes of an activity with up to 12 possible outcomes.</p>		<p>MA-04-4.4.1 Students will determine all possible outcomes of an activity/event with up to six possible outcomes. DOK 2</p> <p>MA-04-4.4.2 Students will determine the likelihood of an event and the probability of an event (expressed as a fraction). DOK 1</p> <p><i>MA-04-4.4.3</i> Students will describe and give examples of the probability of an unlikely event (near zero) and a likely event (near one).</p>	<p>I can list all possible outcomes of an activity or event.</p> <p>I can determine the likelihood and/or probability of an event using fractions.</p> <p>I can give examples of certain, likely, unlikely, and impossible events.</p>	Probability	Outcome	Event	Likelihood	Certain	Likely	Unlikely	Impossible	Chance	Odds
Strategies & Activities		Resources	Common Assessments										
		Essential Questions	Higher Order Questions										