

Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes
Core Lessons---Average 45-50 Minutes Per Day									
501	Probability and Statistics	7.10: The student recognizes that a physical or mathematical model can be used to describe the probability of real-life events.	Construct sample spaces for compound events (dependent and independent) (such as finding all the possible outcomes when drawing colored cubes from a bucket with and without replacement). (10A) B T	5	Connected Mathematics What Do You Expect? Analyzing Number-Cube Games Investigation 2 And Different Views Project Section 5 * Indicates differentiation from the IPG and is color-coded as to the type of differentiation: * = modifications * = substitutions * = additions	2 Days Cont. from the 5 th Six Wks	Vocabulary Not equally likely outcomes Event Complement of an event Class Work/Notes Problem 2.1 and Follow-Up Problem 2.2 and Follow-Up Homework Ideas ACE #11-#15 help students differentiate between experimental and theoretical probabilities. ACE #16 helps students distinguish the difference between a counting tree and a list of all outcomes. ACE #20 incorporates probability with data in a bar graph. Students should complete Section 5 of the Different Views Project before the TAKS Test on April 19 th .	Mathematical Reflections Do #1, #2, and #3 on page 31. (#2 will help the students prepare for the Unit Project later during the 6 weeks.) Assessment Idea Do Check-Up #1.	Investigation 2 Read the teacher notes on pages 31a-31g. Analyzing games for fairness and modifying them to be fair games is a focus. Also, students develop a deeper understanding of the relationship between experimental and theoretical probabilities. Problem 2.1 Playing the Addition Game Students discuss methods for listing all possible outcomes in a large sample space. During the Summary for parts A and C of 2.1, take time to review the probability of a event and its complement from 6 th grade. Ask students questions like these. <ul style="list-style-type: none"> What is the experimental probability of rolling a sum of 9? What is the experimental probability of not rolling a sum of 9? What is the relationship between the event and its complement? Problem 2.2 Playing the Multiplication Game During the Summary for Part D emphasize the proportional reasoning used to get the expected number of points for 100 rolls. For example, $P(\text{Odd}) = \frac{9}{36} = \frac{1}{4} \text{ and } \frac{1}{4} \times \frac{25}{25} = \frac{25}{100}$ Therefore, player A can expect 25 points if the game consisted of 100 rolls of the two number cubes. Students will need approximately 15 minutes in one class period to complete Section 5 of the Different Views Project.
502			Find the approximate probability of a compound event through experimentation (such as collect and use data to determine the experimental probability of rolling an even sum when given two number cubes). (10B)	Not Tested					
504		Use experimental and theoretical probabilities of simple events and compound events to make predictions and decisions (such as obtaining the product of two number cubes and determining a scoring system that would allow this game to be fair; and using experimental data to predict what would happen for 1000 trials). (L)							
508		7.11: The student understands that the way a set of data is displayed influences its interpretation.	Select and use an appropriate representation for presenting collected data and justify the selection (such as determining if a graphical representation of data is appropriate and/or accurate and generate a different graphical representation for the same data). (11A) B T	5					
516			Make inferences and convincing arguments based on an analysis of given or collected data. (11B) B T	5					
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6					
610		7.14: The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.	Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (model problems using two variables and problems showing multiplication of fractions with models). (14A) B T	6					
Numerical Fluency---Average 5-7 Minutes Per Day									
224	Patterns, Relationships, and Algebraic Thinking	7.5: The student uses equations to solve problems.	Formulate a possible problem situation when given a simple equation (such as matching an equation to find a fifth quiz grade when the first four quiz grades were 80, 90, 88, and 100, and the desired average is 90 with a verbal narrative of the situation). (5B) B T	2	Numerical Fluency #130-131	2 Days	The Numerical Fluency section of a student's notebook should include work completed during these 5-7 minutes and/or for homework for these problems.	When creating teacher-made assessments for the Core Lessons, include some skills from Numerical Fluency also.	These 4 days of Numerical Fluency are the same 4 days as the Core Lessons preceding it in this IPG. On TAKS 2003, only about 55% of AISD 7 th graders got the problem similar to these 4 problems correct.
610	Underlying Processes and Mathematical Tools	7.14: The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.	Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (model problems using two variables and problems showing multiplication of fractions with models). (14A) B T	6					

Here are some TEKS-related problems and TAKS-formatted problems that students should be able to solve at this time of the school year.

28 Trinh has 2 quarters, 1 dime, 2 nickels, and 1 penny in his pocket. Which list shows all the possible unique outcomes if Trinh chooses 3 coins at one time from his pocket?

F

Quarter	Dime	Nickel
Quarter	Dime	Penny
Dime	Quarter	Nickel
Nickel	Quarter	Penny
Nickel	Penny	Quarter
Penny	Nickel	Dime

H

Quarter	Quarter	Nickel
Quarter	Quarter	Dime
Quarter	Quarter	Penny
Quarter	Dime	Penny
Quarter	Nickel	Nickel
Quarter	Nickel	Dime
Quarter	Nickel	Penny
Dime	Nickel	Penny
Nickel	Nickel	Penny
Nickel	Nickel	Dime

G

Quarter	Penny	Quarter
Dime	Nickel	Dime
Nickel	Dime	Nickel
Penny	Quarter	Penny

J

Quarter	Quarter	Nickel
Quarter	Quarter	Dime
Quarter	Dime	Penny
Quarter	Nickel	Nickel
Quarter	Nickel	Dime
Quarter	Penny	Penny
Dime	Quarter	Nickel
Nickel	Quarter	Dime
Nickel	Dime	Penny

Lily played a game where she spun each of the spinners shown below once.

Spinner 1 Spinner 2 Spinner 3

Which choice shows all the possible unique combinations of an odd number on Spinner 1, an A or a B on Spinner 2, and a II on Spinner 3?

F

Spinner 1	Spinner 2	Spinner 3
1	A	II
2	B	II
3	A	II
4	B	II
5	A	II
6	B	II
7	A	II
8	B	II

H

Spinner 1	Spinner 2	Spinner 3
1	A	II
3	B	II
5	A	II
7	B	II
1	A	II
3	B	II
5	A	II
7	B	II

G

Spinner 1	Spinner 2	Spinner 3
1	A	II
3	A	II
5	A	II
7	A	II
1	B	II
3	B	II
5	B	II
7	B	II

J

Spinner 1	Spinner 2	Spinner 3
1	A	I
3	A	II
5	A	I
7	A	II
1	B	I
3	B	II
5	B	I
7	B	II

7th Grade TAKS 2003 #24
36% of AISD 7th Graders answered #24 correctly.

Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes		
Core Lessons---Average 45-50 Minutes Per Day											
117	Number, Operation, and Quantitative Reasoning	7.1: The student represents and uses numbers in a variety of equivalent forms.	Convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator. (1B) B T	1	Connected Mathematics What Do You Expect? Probability and Area Investigation 3	3 Days	Vocabulary Random selection Simple event	Mathematical Reflections Do #1 and #2 on page 40.	Investigation 3 Read the teacher notes on pages 40a-40c.		
220	Patterns, Relationships, and Algebraic Thinking	7.3: The student solves problems involving proportional relationships.	Estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units. (3B) B T	2			Class Work/Notes Problem 3.1 and Follow-Up Problem 3.2 and Follow-Up	Assessment Idea Do partner Quiz A.	Problem 3.1 Cracking Level 1 Students relate probabilities to a geometric model: the area of a 10 by 10 grid. Now is a good time to also discuss the variety of ways to review probabilities the numerical models of fractions, decimals, and percents.		
406	Measurement	7.9: The student solves applications problems involving estimation and measurement.	Estimate measurements and solve application problems including length (including perimeter and circumference), area, and volume (<i>such as designing an efficient package to hold 24 circular cookies, each with a diameter of 2 inches. The efficiency of the package is determined by criteria set by the teachers and students</i>). (9) B T	4			Homework Ideas ACE #2-#4 give students some action with fractions in other configurations of area. Part C requires proportional reasoning .	<ul style="list-style-type: none"> Students work in pairs. Students are permitted to use their notebooks, calculators, and other appropriate materials. Pairs submit a draft of the quiz for teacher feedback, revise their work, and turn in the finished product for assessment. Giving feedback generally involves telling students which questions they have answered incorrectly or how many of the possible points they would receive for a question. It is an opportunity to let students know if they are on track of if they need to rethink a problem. Giving feedback should not mean re-teaching or leading students to the correct solution. 	If you happen to have internet access on a MAC computer, you can download the software for the Treasure Hunt game at http://www.math.msu.edu/cmp/Rsources/Software.htm However the software is not necessary to do the Investigation.		
504	Probability and Statistics	Use experimental and theoretical probabilities of simple events and compound events to make predictions and decisions (such as obtaining the product of two number cubes and determining a scoring system that would allow this game to be fair; and using experimental data to predict what would happen for 1000 trials). (L)									
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6					ACE #7 connects the area model with scale factor and explores the probability.		Problem 3.2 Cracking Level 2 Students combine areas of rooms to find probabilities.
606			Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. (13B) B T	6					ACE #8 gives students data in a line plot and a verbal description and ask the students to design the matching area model.		PACING SUGGESTION Day 1: Do Problem 3.1 and Follow-Up in class and assign Problem 3.2 and Follow-Up for homework. Day 2: Summarize Problem 3.2 and assign ACE problems, including ACE#9. Day 3: Do partner Quiz A.
610			7.14: The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.	Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (<i>model problems using two variables and problems showing multiplication of fractions with models</i>). (14A) B T	6						
Numerical Fluency---Average 5-7 Minutes Per Day											
131	Number, Operation, and Quantitative Reasoning	7.2: The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	Represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers (<i>such as how many 3/4 pound bags of coffee can be made from a 12 pound bag</i>). (2A) B T	1	Numerical Fluency #132-#134	3 Days	The Numerical Fluency section of a student's notebook should include work completed during these 5-7 minutes and/or for homework for these problems.	When creating teacher-made assessments for the Core Lessons, include some skills from Numerical Fluency also.	These 3 days of Numerical Fluency are the same 3 days as the Core Lessons preceding it in this IPG. Linear and area models are helpful for understanding multiplication and division with fractions. Using area models with probability help students transition to the multiplication numerical model.		
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6							

Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes
Core Lessons---Average 45-50 Minutes Per Day									

NOTE: Many of the matrix items can be covered simultaneously.
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Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes		
131	Number, Operation, and Quantitative Reasoning	7.2: The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	Represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers (such as how many 3/4 pound bags of coffee can be made from a 12 pound bag). (2A) B T	1	<p align="center">Connected Mathematics</p> <p align="center">What Do You Expect?</p> <p align="center">Analyzing Two-Stage Games</p> <p align="center">Investigation 4</p> <p align="center">And</p> <p align="center">* Monty Hall Problem</p> <p align="center">And</p> <p align="center">Different Views Project Section 6</p>	4 Days	Vocabulary Area model for probability Compound events Independent events Dependent events Class Work/Notes Problem 4.1 and Follow-Up Monty Hall Problem Homework Ideas Consider assigning all 7 ACE problems. Complete Section 6 of the Different Views Project after TAKS.	Mathematical Reflections Do #1 and #2 on page 49.	Investigation 4 Read the teacher notes on pages 49a-49j. Problem 4.1 Choosing Paths Students simulate the Deep in the Dungeon game. They use area models to represent the probability of this two-stage compound dependent event. Discuss why using a counting tree for dependent events is difficult.		
133			Use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals. (2B) B T	1							
134			Select and use appropriate operations to solve problems and justify the selections. (2F) B T	1							
501	Probability and Statistics	7.10: The student recognizes that a physical or mathematical model can be used to describe the probability of real-life events.	Construct sample spaces for compound events (dependent and independent) (such as finding all the possible outcomes when drawing colored cubes from a bucket with and without replacement). (10A) B T	5			<p align="center">PRINCIPLES OF LEARNING</p> Students can assess their understanding of representing multiplication of fractions with models using these probability problems.	<p align="center">* Monty Hall Problem</p> See website http://illuminations.nctm.org/LessonDetail.aspx?ID=L377 . The Monty Hall problem gives students the choice of 3 doors behind one of which is a good prize (2 doors show poor prizes). After choosing a door, Monty Hall opens one of the other doors, showing a bad prize. Students may then switch from or stay with their original choice. Many people mistakenly believe it does not matter if they switch or stay (believing the probability will stay at 1/3 no matter what). Many trials of the simulation help students see that if they switch, they will win twice as many times. Can use 3-part spinner to simulate trials. Can also use the applet at http://www.shodor.org/interactivate/activities/monty3/index.html to simulate the problem many times. Be sure to read through the explanation of probability found in the websites.			
502			Find the approximate probability of a compound event through experimentation (such as collect and use data to determine the experimental probability of rolling an even sum when given two number cubes). (10B)	Not Tested							
503			Select and use different models to simulate an event (such as selecting coins, number cubes, spinners, drawing cubes, etc to simulate choosing different pathways in a computer game). (L)								
516		7.11: The student understands that the way a set of data is displayed influences its interpretation.	Make inferences and convincing arguments based on an analysis of given or collected data. (11B) B T	5					<p align="center">Upcoming Project</p> After Investigation 6, students will design a carnival game applying concepts of probability and expected value. Taking time to play these CMP games suggested for TAKS days may help students think of game ideas for their upcoming project.	<p align="center">TAKS Days</p> Here are some ideas for TAKS testing days. <ol style="list-style-type: none"> 1) Review or extend Numerical Fluency ideas 2) Review or extend Core Lesson ideas 3) Play these games found in Connected Mathematics units <ul style="list-style-type: none"> • Roller Derby (How Likely Is It?, page 42) • Integer Product Game (Accentuate the Negative, page 57) • Dialing for Digits (Data Around Us, page 24) • Four in a Row (Shapes and Designs, page 29) • The Factor Game (Prime Time, page 6) 	
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6							
606			Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. (13B) B T	6							
610			7.14: The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.	Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (<i>model problems using two variables and problems showing multiplication of fractions with models</i>). (14A) B T			6				
Numerical Fluency---Average 5-7 Minutes Per Day											
131	Number, Operation, and Quantitative Reasoning	7.2: The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	Represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers (such as how many 3/4 pound bags of coffee can be made from a 12 pound bag). (2A) B T	1	Numerical Fluency #135-#138	4 Days	The Numerical Fluency section of a student's notebook should include work completed during	When creating teacher-made assessments for the Core Lessons, include some skills from Numerical Fluency also.	These 4 days of Numerical Fluency are the same 4 days as the Core Lessons preceding it in this IPG.		

Austin ISD Instructional Planning Guide – Mathematics
6th Six Weeks – April 10th through May 24th (32 days)

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Grade 7 Pre-AP Mathematics

Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6			completed during these 5-7 minutes and/or for homework for these problems.		Students use numerical models for multiplication with fractions to think about the reasonableness of their products.

Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes
Core Lessons---Average 45-50 Minutes Per Day									
117	Number, Operation, and Quantitative Reasoning	7.1: The student represents and uses numbers in a variety of equivalent forms.	Convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator. (1B) B T	1	<p>✘ Laying the Foundation: Connecting Middle Grades to AP Mathematics</p> <p>Expected Value</p> <p>✘ The Passing Game</p> <p>And</p> <p>✘ The Passing Game Revisited</p> <p>And</p> <p>✘ Free French Fries</p>	5 Days	Vocabulary Expected value	Mathematical Reflections Do #1 and #2 on page 58.	<p>AFTER TAKS Keep teaching and learning aligned with the IPG for the rest of the school year.</p> <p>✘ These lessons come from the AP Guidebook <u>Laying the Foundation</u> Read the teacher notes attached to the APG. An underlying assumption in these problems is that the probabilities remain constant.</p> <p>✘ The Passing Game Students will like the connection to football. Students will simulate a 50% chance of completing a pass by using a die, a penny, or a deck of cards (could substitute a spinner for deck of cards). Allow students to choose their own method.</p> <p>✘ The Passing Game Revisited Students simulate a quarterback's passes again, except now the simulation uses a 75% chance of completing a pass. Again, students will choose what manipulative (die, coin, or cards) to use.</p> <p>✘ Free French Fries Students simulate expected values of waiting time. Previous simulations had a specific number of trials. Here, the simulation is run until the desired outcome is attained.</p>
130	Number, Operation, and Quantitative Reasoning	7.2: The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	Use division to find unit rates and ratios in proportional relationships such as a speed, density, price, recipes, and student-teacher ratio. (2D) B T	1					
131			Represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers (such as how many 3/4 pound bags of coffee can be made from a 12 pound bag). (2A) B T	1					
134			Select and use appropriate operations to solve problems and justify the selections. (2F) B T	1					
217	Patterns, Relationships, and Algebraic Thinking	7.3: The student solves problems involving proportional relationships.	Estimate and find solutions to application problems involving percent (such as, if there are 17 females and 15 males in a class, find the percent of the class that is female). (3A) B T	2					
220			Estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units. (3B) B T	2					
501	Probability and Statistics	7.10: The student recognizes that a physical or mathematical model can be used to describe the probability of real-life events.	Construct sample spaces for compound events (dependent and independent) (such as finding all the possible outcomes when drawing colored cubes from a bucket with and without replacement). (10A) B T	5					
502			Find the approximate probability of a compound event through experimentation (such as collect and use data to determine the experimental probability of rolling an even sum when given two number cubes). (10B)	Not Tested					
503			Select and use different models to simulate an event (such as selecting coins, number cubes, spinners, drawing cubes, etc to simulate choosing different pathways in a computer game). (L)						
504			Use experimental and theoretical probabilities of simple events and compound events to make predictions and decisions (such as obtaining the product of two number cubes and determining a scoring system that would allow this game to be fair; and using experimental data to predict what would happen for 1000 trials). (L)						
514			Make a coordinate graph that shows the relationship between two variables, identify the two variables, choose an axis for each variable, and select an appropriate scale for each axis. (L)						
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6					
607			Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table (model using vertical and horizontal tables), working a simpler problem, or working backwards to solve a problem. (13C) B T	6					
610			Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (model problems using two variables and problems showing multiplication of fractions with models). (14A) B T	6					
							<p style="text-align: center;">Future Learning---Future Accountability----Future TAKS</p> <p>Help students comprehensively understand the mathematics in <u>What Do You Expect?</u> In this unit, students learn deeply about the probability TEKS for both 7th and 8th grade. Not only will the 7th and 8th grade TAKS tests assess students on middle school probability expectations, but 9th, 10th, and 11th grade TAKS continue to assess students on these middle school probability TEKS. Thus, there is a high need for bringing students to a deep understanding of probability in middle school at this time.</p>		
							<p style="text-align: center;">EXTENSION---FYI</p> <p>Students, who study probability in high school, such as in AP Statistics, will learn a more formal definition of expected value. See the algebra connection of free throw shooting to the Golden Ratio on page 58h of the teacher notes.</p>		

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Numerical Fluency---Average 5-7 Minutes Per Day									
122	Number, Operation, and Quantitative Reasoning	7.2: The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	Simplify numerical expressions involving order of operations and exponents (such as find the value of $9 + 6(8 - 2) \div 3 = 17$). (2E) B T	1	Numerical Fluency #139-#143	5 Days	The Numerical Fluency section of a student's notebook should include work completed during these 5-7 minutes and/or for homework for these problems.	When creating teacher-made assessments for the Core Lessons, include some skills from Numerical Fluency also.	These 4 days of Numerical Fluency are the same 4 days as the Core Lessons preceding it in this IPG. Students continue to develop their skill using the correct order of operations by including positive fractions and applications.
131			Represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers (such as how many $\frac{3}{4}$ pound bags of coffee can be made from a 12 pound bag). (2A) B T	1					
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6					

A spinner and a fair number cube are used in a game. The spinner has an equal chance of landing on 1 of 4 colors: red, purple, blue, or green. The faces of the cube are labeled 1 through 6. What is the probability of a player spinning the color red and then rolling a 5 or 6?

F $\frac{3}{10}$

G $\frac{1}{8}$

H $\frac{1}{12}$

J $\frac{1}{24}$

8th Grade TAKS 2003 #22
43% of AISD 8th Graders answered #22 correctly.

Fidel tosses four fair coins. What is the probability that all four coins will land heads up?

F $\frac{1}{16}$

G $\frac{1}{8}$

H $\frac{1}{4}$

J $\frac{1}{2}$

8th Grade TAKS 2004 #30
30% of AISD 8th Graders answered #30 correctly.

The probability of a table-tennis ball being defective is $\frac{1}{10}$. About how many balls would be defective in a case of 725 table-tennis balls?

A 1

B 7

C 73

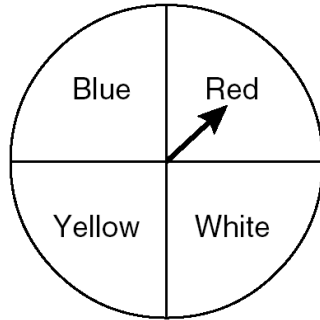
D 80

8th Grade TAKS 2004 #49
76% of AISD 8th Graders answered #49 correctly.

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Core Lessons---Average 45-50 Minutes Per Day									
117	Number, Operation, and Quantitative Reasoning	7.1: The student represents and uses numbers in a variety of equivalent forms.	Convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator. (1B) B T	1	Connected Mathematics What Do You Expect? Carnival Games Investigation 6	3 Days	Class Work/Notes Problem 6.1 and Follow-Up Problem 6.2 and Follow-Up Problem 6.3 and Follow-Up	Mathematical Reflections Do #1 and #2 on page 68.	Investigation 6 Read the teacher notes on pages 68a-68i. In each problem, students compare two games and must justify selecting one game over the other. Problem 6.1 Drawing Marbles Students compare two games involving drawing cubes from a bucket. Julie's game involves replacement, while Li Fong's does not involve replacement. Students use both experimental and theoretical probabilities to compute expected payouts. Problem 6.2 Choosing the Best Game Students compare two games. The first game involves an area model for two successive outcomes while the second game involves tossing a coin four times. Students use theoretical probabilities to compute payouts and profits. During the summary, have students share the various strategies they used to find the probabilities. Problem 6.3 Taking a Computer Safari Students compare two versions of two-stage games. Students use theoretical probabilities to compute probabilities, payouts, and profits. For part B, have students share how they found the probabilities. Students will need time to finish the Different Views Project.
131	Number, Operation, and Quantitative Reasoning	7.2: The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	Represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers (such as how many 3/4 pound bags of coffee can be made from a 12 pound bag). (2A) B T	1					
134	Number, Operation, and Quantitative Reasoning		Select and use appropriate operations to solve problems and justify the selections. (2F) B T	1					
220	Patterns, Relationships, and Algebraic Thinking	7.3: The student solves problems involving proportional relationships.	Estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units. (3B) B T	2					
501	Probability and Statistics	7.10: The student recognizes that a physical or mathematical model can be used to describe the probability of real-life events.	Construct sample spaces for compound events (dependent and independent) (such as finding all the possible outcomes when drawing colored cubes from a bucket with and without replacement). (10A) B T	5					
502			Find the approximate probability of a compound event through experimentation (such as collect and use data to determine the experimental probability of rolling an even sum when given two number cubes). (10B)	Not Tested					
504			Use experimental and theoretical probabilities of simple events and compound events to make predictions and decisions (such as obtaining the product of two number cubes and determining a scoring system that would allow this game to be fair; and using experimental data to predict what would happen for 1000 trials). (L)						
605	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics. (13A) B T	6					
607			Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table (model using vertical and horizontal tables), working a simpler problem, or working backwards to solve a problem. (13C) B T	6					
610			7.14: The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.	Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (<i>model problems using two variables and problems showing multiplication of fractions with models</i>). (14A) B T			6		
Numerical Fluency---Average 5-7 Minutes Per Day									
223	Patterns, Relationships, and Algebraic Thinking	7.5: The student uses equations to solve problems.	Use concrete models to solve equations and use symbols to record the actions (<i>such as using a balance scale to show the equivalence of two relationships with two variables and stating the necessary actions to perform with the objects on both sides of the scale to solve the relationship for one variable in terms of the other variable</i>). (5A) B T	2	Numerical Fluency #144-#146	3 Days	The Numerical Fluency section of a student's notebook should include work completed during these 5-7 minutes and/or for homework for these problems.	When creating teacher-made assessments for the Core Lessons, include some skills from Numerical Fluency also.	These 5 days of Numerical Fluency are the same 5 days as the Core Lessons preceding it in this IPG. Students solve equations using a picture of a model, the balanced scale. These NF problems involve positive fractions.

Looking forward to the 9th Grade TAKS Test. Here are some TEKS-related problems and TAKS-formatted problems that students will be expected to solve in the coming school years.

32 A spinner was spun 20 times. The results are shown in the table below.



Spinner Results

Red	7
White	5
Blue	4
Yellow	4

Which color on the spinner has the same experimental probability as theoretical probability?

- F Red
- G White
- H Blue
- J Yellow

9th Grade TAKS 2004 #32
51% of AISD 9th Graders answered #32 correctly.

Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes
Core Lessons---Average 45-50 Minutes Per Day									
134	Number, Operation, and Quantitative Reasoning	7.2: The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.	Select and use appropriate operations to solve problems and justify the selections. (2F) B T	1	<p align="center">Connected Mathematics</p> <p align="center">What Do You Expect?</p> <p align="center">Unit Project Carnival Games Pages 79-80</p>	8 Days	<p>Students will work with a small group of three or four students to design a carnival game, create a model of their game, and write a report that describes how the game is played and analyzes the expected payoff.</p> <p>The three steps for the project appear on pages 79-80 of the student book. Make copies of the "Suggested Scoring Rubrics" or other rubric you decide to use and distribute and discuss it with the students.</p> <p>Make a decision on whether you want one written report from the whole group or whether each student will write their own report.</p> <p>Let students know exactly how much class time they will have for working on the project during these 5 days. Students in each group may need to assign each other homework so the project gets completed on time.</p>	<div style="border: 1px solid black; padding: 5px;"> <p align="center">DISTRICT ASSESSMENTS</p> <p>During the 6th Six Weeks, two days are allotted for review and for taking the 6th Six Weeks' Test.</p> </div>	<p>There are transparency masters of the student book pages 79-80 in the teacher's edition on pages 95-96. You can use these transparencies when introducing the project to the students in class.</p> <p>Also in the teacher's edition, there are additional pages to help guide you through the project.</p> <p>See page 105 for "Preparing for the Carnival Game Project". A list of materials helpful to have on hand is included.</p> <p>See page 106 for the "Suggested Scoring Rubric" for the game design part of the project.</p> <p>See pages 107-108 for the "Suggested Scoring Rubric" for the written report part of the project.</p> <p>See pages 109-114 for samples of student work for this project and the teacher's comments about the student work.</p> <p>If time permits, use one of the last days of the school year to play the games.</p>
220	Patterns, Relationships, and Algebraic Thinking	7.3: The student solves problems involving proportional relationships.	Estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units. (3B) B T	2					
501	Probability and Statistics	7.10: The student recognizes that a physical or mathematical model can be used to describe the probability of real-life events.	Construct sample spaces for compound events (dependent and independent) (such as finding all the possible outcomes when drawing colored cubes from a bucket with and without replacement). (10A) B T	5					
502			Find the approximate probability of a compound event through experimentation (such as collect and use data to determine the experimental probability of rolling an even sum when given two number cubes). (10B)	Not Tested					
508		7.11: The student understands that the way a set of data is displayed influences its interpretation.	Select and use an appropriate representation for presenting collected data and justify the selection (such as determining if a graphical representation of data is appropriate and/or accurate and generate a different graphical representation for the same data). (11A) B T	5					
516			Make inferences and convincing arguments based on an analysis of given or collected data. (11B) B T	5					
606	Underlying Processes and Mathematical Tools	7.13: The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.	Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. (13B) B T	6					
607			Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table (model using vertical and horizontal tables), working a simpler problem, or working backwards to solve a problem. (13C) B T	6					
610		7.14: The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.	Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (model problems using two variables and problems showing multiplication of fractions with models). (14A) B T	6					
Numerical Fluency---Average 5-7 Minutes Per Day									
215	Patterns, Relationships, and Algebraic Thinking	7.4: The student represents a relationship in numerical, geometric, verbal, and symbolic form.	Generate formulas involving conversions, perimeter, area, circumference, volume, scaling (such as building a horizontal table with the first row indicating the number of yards 1, 2, 3, 4, and the next row indicating the respective number of feet 3, 6, 9, 12 and generate the formula that the total number of feet equals three times the number of yards). (4A) B T	2	<p align="center">Numerical Fluency #147-#154</p>	8 Days	<p>The Numerical Fluency section of a student's notebook should include work completed during these 5-7 minutes and/or for homework for these problems.</p>	<p>When creating teacher-made assessments for the Core Lessons, include some skills from Numerical Fluency also.</p>	<p>These 5 days of Numerical Fluency are the same 5 days as the Core Lessons preceding it in this IPG.</p> <p>Students revisit their table building, coordinate graph-making, and equation writing skills from the 1st 6 weeks.</p>
209			Graph data to demonstrate relationships in familiar concepts such as conversions, perimeter, area, circumference, volume, and scaling. (4B) B T	2					
223		7.5: The student uses equations to solve problems.	Use concrete models to solve equations and use symbols to record the actions (such as using a balance scale to show the equivalence of two relationships with two variables and stating the necessary actions to perform with the objects on both sides of the scale to solve the relationship for one variable in terms of the other variable). (5A) B T	2					
Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes
Core Lessons---Average 45-50 Minutes Per Day									

NOTE: Many of the matrix items can be covered simultaneously.
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Matrix #	Matrix Strand	TEKS Knowledge & Skill	Student Expectation	TAKS OBJ	Resource	Time/Pace	Student Work Products	Assessment	Teaching Notes
610	Underlying Processes and Mathematical Tools	7.14: The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.	Communicate mathematical ideas with language, efficient tools, appropriate units, and graphical, numerical, physical, and algebraic mathematical models (<i>model problems using two variables and problems showing multiplication of fractions with models</i>). (14A) B	6	Self-Constructed Glossary REVIEW	2 Days	<p>Vocabulary Check vocabulary sections of the IPGs for each six weeks. Be sure the main terms from each six weeks are included in each students' self-constructed glossary. Consider making an alphabetical list for the words you consider non-negotiable to be in the glossary based on your work with your students this year.</p> <p>Suggested Pacing Day 1: Review the words from letters A through M of the alphabet. Make modifications as needed for clarity and accuracy. Day 2: Review the words from letters N through Z of the alphabet. Make modifications as needed for clarity and accuracy.</p> <p align="center">Very Important Homework</p> <p>Encourage each student to secure all pages of his or her glossary with brads, binder clips, or by placing it in a folder or notebook. Encourage students to store their glossaries in a safe place at home during the summer so that it will be easy to locate and insert in their math binder for Grade 7. Discuss places at home during class to determine whether or not they are truly safe places. When students are asked to bring their notebook for Grade 7 Mathematics next year, tell them to place their glossary from Grade 6 Mathematics in the vocabulary section.</p>	<p>Day 1 Informally, ask each student in class to explain at least one word and its definition.</p> <p>Day 2 Informally, ask each student in class to explain at least one word and its definition.</p> <p>As Time Permits Consider giving an open notebook vocabulary quiz. Select at least two mathematically prominent words for Grade 6 Mathematics from each six weeks of the school year.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p align="center">DISTRICT ASSESSMENTS</p> <p>During the 6th six weeks, two days are allotted for review and taking the 6th Six Weeks' Test. This test is aligned with matrix skills taught in the 6th six weeks</p> </div>	<p>Austin ISD Vocabulary Norm As part of the Austin ISD District Vocabulary Norm for Grades 6, 7, and 8, students have created a self-constructed glossary during the school year. The glossary is somewhat alphabetical, with at least one page per letter of the alphabet. Because of this structure, the glossary is expandable as students go from grades 6 to 7 to 8.</p> <p>Reminder: The self-constructed glossary is alphabetical by page. However, on each page the words are NOT necessarily in alphabetical order.</p> <p>For each word stated in their glossary there should be a picture or example along with a definition in student voice. These pictures, examples and definitions could have been modified as the school year progressed for clarity and accuracy.</p> <p>Consider having students work in pairs as they review the words for each letter of the alphabet. Students should modify pictures, examples, and definitions that are incomplete or inaccurate.</p>
Numerical Fluency--Average 5-7 Minutes Per Day									
209	Patterns, Relationships, and Algebraic Thinking	7.4: The student represents a relationship in numerical, geometric, verbal, and symbolic form.	Graph data to demonstrate relationships in familiar concepts such as conversions, perimeter, area, circumference, volume, and scaling. (4B) B T	2	Numerical Fluency #155-#156	2 Days	The Numerical Fluency section of a student's notebook should include work completed during these 5-7 minutes and/or for homework.	When creating teacher-made assessments for the Core Lessons, include some skills from numerical fluency.	These 2 days of Numerical Fluency are the same 2 days as the Core Lessons preceding them in this IPG.