

LEARNING PLAN

Xraka White

<p>Exploratory Activities (& Warm-Ups)</p> <ul style="list-style-type: none"> • Visual Patterns I, II (CTA) • Number Patterns I, II (CTA) • Patterns (Concrete & Number) (ATFE) • Practically Predictable – Mixed Patterns (WN1_AIMS) • Now What? – Mixed Patterns p1 (WN3_AIMS) • Next in Line – Mixed Patterns p4 (WN3_AIMS) • Odd Integer Patterns p.34– CTA (Use Sum Patterns in AIMS for reinforcement or tutorials) • What’s My Rule, p22-23 – Function Machines • Investigation 3. The function machine p67-68 (ADD_PF) • Flow Along (A-F) pp88-95 (APP6) 	<p>CONCEPT</p> <p>Variables & Relations (Informal Patterns/ Functions)</p>
<p>Concept Development Activities</p> <ul style="list-style-type: none"> • Dependent Relationships 1 • Bathtub Graph (Task 14 – RUSMP_Informal Patterns) • Pipe Cleaners (TTAR) • Proportions in Patterns (TPFC) – OH, HD (also see NTA Chapter1) • Stretching Sequences (TTAR) • Making Connections (TTAR) • Stories to Graphs/ Graphs to Stories p27-35 (NTA) • How High Can You Throw? p28- modified (WN3_AIMS) • How Fast Can You Throw? p28- modified (WN3_AIMS) • Fun and Sun Rent-a-Car – Technology Application (http://math.rice.edu/~lanius/Algebra/rentacar.html) • B6b - Geometric Sequences (CLEAR Unit 7 p22) • Folding Paper (p24-CLEAR/ p14-Invest. 3 ADD_PF, p10 - WN1_AIMS) • Moving’ on Down the Line – Distance vs. Time (TTAR) • Linear vs. Exponential Growth <ul style="list-style-type: none"> ○ Rumors (PBS) (ADD_PF Ch. 1 Investigation 1) ○ Investigation 4: Miracle Mike p15-16 (ADD_PF) ○ Investigation 4: Double Your Treasure p17 (ADD-PF) • Investigation 1. Graphs and Patterns – The race p55-60 (ADD_PF) • Walking the Graph Calculator Activities • Patterns in Numbers and Shapes Lessons 1-12 – selected lessons depending upon lessons from other sources(MSP) <p>(All Navigating Through Algebra Lessons to be disbursed throughout Concept Development, Basic Facts, and Assessment)</p>	<p>Materials and Resources</p> <p>Pipe Cleaners; Color Cubes; Meter Sticks; Graph Chart Paper; Pattern Blocks; Toothpicks; Color Tiles; Rulers; Markers/ Colored Pencils; Colored Peel & Stick Dots; Sequence Cards; Stop Watches (How High/How Fast); Softball or Tennis Ball; Graphing Calculators; 8 ½ X 11 Copy Paper; Blue Balls Bounce Cards; Coffee Stirrers or Thin Spaghetti; 100’ Measuring Tape</p> <p>Legend:</p> <p>OH – Overhead GOH – Group OH HD – Handout ATFE – Algebra Thinking 1st Experiences TTAR – TEXTEAMS Algebraic Reasoning TPFC – The Pattern and Function Connection (Key Curriculum) CTA – Critical Thinking Activities (Dale Seymour) MCSG – Mathematical Connections (Houghton/ McDougal) APP – Algebra Puzzles and Problems (Creative Publications) WN_AIMS - What’s Next? AIMS (Volumes 1-3) ADD_PF – Addenda Series Patterns and Functions (NCTM) MSMA – Middle School Math Assessments (UT Dana Center) NTA – Navigating Through Algebra (NCTM) MSP – MathScape Patterns (Creative Publications) PBS – Public Broadcasting Service (www.pbs.org)</p>

Basic Facts and Standard Algorithms Formalized

- Patterns in Numbers and Shapes All Homework 1-12 – selected questions depending upon lesson in class(MSP)
- Patterns in Numbers and Shapes 2-5 Patterns (Number) pp29HW (MCTR)
- That Figures p12 (WN1_AIMS)
- Proportions in Patterns (TPFC) –HD
- Keep Building (A-F) pp104-111 (APP7)
- Doodling – CTA
- Difference Patterns – CTA (modify to take out word “quadratic” for 7 & 8 grade)
- 2-6 Functions pp30-31 (MCTR)
- Variable Centers
 - Fruit Cocktail (A-F) pp72-79 (APP6)
 - Tag Sale (A-F) pp72-79 (APP7)
- Function Centers
 - Function Table (A-F) pp80-87 (APP6)
 - Make a Table (A-F) pp80-87 (APP7)
 - Beginning and End (A-F) pp88-95 (APP7)
 - Functions and Graphs (A-F) pp96-103 (APP7)
- Banquet Tables (Arithmetic - Clear)
- Graphing
 - Functions and Variables Worksheet (RUSMP_Inf. Patterns)
 - Identifying Qualitative Graphs (Mathematics Teacher 1994)
 - Graphs with Scales (Mathematics Teacher 1994)
 - Walking the Graph Calculator Activities
- Linear vs. Exponential Growth
 - Which Plan is better? P30-31
 - Blue Balls Bounce p63 (United We Solve)
 - Red Balls Bounce p64 (United We Solve)
- **(All Navigating Through Algebra Lessons to be disbursed throughout Concept Development, Basic Facts, and Assessment)**

Assessment

- Selected MathBenchmarks.org (7.4A, 7.4B, 7.4C, 8.4A, 8.5A, 8.5B)
- Snapshot & TAKS style questions given in open-ended format. (Few multiple choice.)
- Grade 8: Fast Food Workout p103 (MSMA) can also be used in CD
- Grade 8: City in Space p67-68 (MSMA) can also be used in CD
- Missing Values p39-40, BLM (NTA)
- Sequence Card Matching Game (SBISD)
- Students will create a booklet, power point presentation “flipper”, etc to explain vocabulary, examples, and non-examples from this unit to help a “friend” catch-up who has been out sick.
- See News Reports under Student Products
- Patterns in Numbers and Shapes All Quizzes 1-12 – selected questions depending upon lesson in class(MSP)
- **(All Navigating Through Algebra Lessons to be disbursed throughout Concept Development, Basic Facts, and Assessment)**

Related TEKS

7.4A, 7.4B, 7.4C
8.4A, 8.5A, 8.5B

Originality and Creativity

Student Products

Written

A. Create own number pattern and solve. Trade pattern with partner. Describe partner’s pattern in words. Find the next 5 numbers in the pattern. Come up with as many ways possible to continue the pattern. p65 # 27 (MC)

B. “Doing/ Undoing” - Create a pattern using a manipulative of choice. Design, build, and test the pattern. Create a table that includes the shape number, shape, process, and value of the shape. Develop at least two possible solutions for completing the pattern using the model alone. (No rules, tables, etc.) Trade with partners. Partner must do all of the above starting with “Create a table.”

Verbal

- News (Oral) Reports on things such as:

- Describe various patterns in words.
- Describe how to derive a specific function from a given set of data.
- Explain relationships between two or more variables.

Kinesthetic

Students will use a function found in exercise to determine how fast and how high they can throw based on experimental data.

Students will gather data from experiments involving walking or bouncing balls.

Visual

Students will create a booklet, power point presentation “flipper”, etc to explain vocabulary, examples, and non-examples from this unit to help a “friend” catch-up who has been out sick.

Students will create large posters to show group results of an activity or experiment.