

## **DIVISION I (Grades K-1)**

### **MONTH BY MONTH INSTRUCTIONAL SEQUENCE FOR THE MATHEMATICS PENTATHLON® GAMES: Linking the Games With Adventures in Problem Solving Book I and Investigation Exercises Book I**

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#### **SEPTEMBER**

- **CALLA**  
Adventures: Activity I - pp. 97-100 (Standard Configurations)  
Investigations: (if time permits) pp. 3-19
- **KINGS & QUADRAPHAGES**  
Adventures: Activity I - pp. 131-132 (Five by Five K's & Q's)  
Adventures: (if time permits) Activities III, IV, and V - pp. 135-140 (Pong, Pong Too, & Quarterback Runner)
- **SHAPE UP**  
Adventures: Activity I - pp. 11-13 and Activity III - pp. 14, 16-19 (Investigate the attributes and various rotations of gameboard shapes.)

#### **OCTOBER**

- **CALLA**  
Continue practice of Standard Configurations.  
Game: Teach placement and distribution of cubes.
- **KINGS & QUADRAPHAGES**  
Adventures: Activity II - pp. 133-134 (Seven By Seven K's & Q's)
- **HEX-A-GONE**  
Adventures: Activities I and II - pp. 163-164 (Investigate the attributes and relationships of pattern blocks.) and Activity VII - pp. 178, 181-185 (Spatial Cover Challenge)
- **SHAPE UP**  
Adventures: (if time permits) Activities IV, V, VI, VII, and/or VIII - pp. 20-29

#### **NOVEMBER**

- **CALLA**  
Game: Teach rules and practice game with "Free Turn" rule, but not "Capture" rule.
- **KINGS & QUADRAPHAGES**  
Game: Practice game on the 9 x 9 gameboard.
- **HEX-A-GONE**  
Adventures: Activity X - pp. 178, and 186-188 (Intro to Hex-A-Gone)
- **SHAPE UP**  
Game: Teach rules and practice **without** the use of the "bump" rules.

**DECEMBER**

- **CALLA**  
Game: Teach “Capture” rule and practice game using all rules.
- **HEX-A-GONE**  
Game: Teach rules and practice.  
Continue Adventures Activity X stressing strategies of placement.
- **SHAPE UP**  
Game: Teach the “bump rules” and practice game with all rules.
- Continue to practice Kings & Quadruphages.

**JANUARY**

- **STAR TRACK**  
Game: Teach rules and practice.
- **HEX-A-GONE**  
Investigation Exercises: pp. 9-14  
Adventures: (if time permits) pp. 164-174
- Continue to practice Calla, Hex-A-Gone, Kings & Quadruphages, and Shape Up.

**FEBRUARY**

- Teach tournament rules to all five games.

**MARCH AND APRIL**

- Continue to practice all 5 games using tournament rules.
- **CALLA**  
Investigations: Select appropriate pages 20-28.
- **SHAPE UP**  
Investigations: Select appropriate pages 3-15.
- **HEX-A-GONE**  
Investigations: Select appropriate pages 3-8.
- **STAR TRACK**  
Investigations: Select appropriate pages 3-17.
- **KINGS & QUADRUPHAGES**  
Investigations: Select appropriate pages 3-13.

## **DIVISION II (Grades 2-3)**

### **MONTH BY MONTH INSTRUCTIONAL SEQUENCE FOR THE MATHEMATICS PENTATHLON® GAMES**

#### **Linking the Games With Adventures in Problem Solving Book I and Investigation Exercises Book I**

(Revised Adventures in Problem Solving 2000)

#### **SEPTEMBER**

- PAR 55  
Adventures: Activities I, II, and III - pp. 37-39 (Investigate and compare the attribute blocks.) and Activity IV - p. 40 (One and Two Way Differences)
- FIAR  
Adventures: (if time permits) Activities V and VI - pp. 120-123 (4 and 5 Chip Line Games) and Activity VII - pp. 124-125 (TIAR)  
Game: Teach game **without** blocking rule.
- RAMROD  
Adventures: Activities I, II, and III - pp. 141-143 (Investigate the number values of the rods.)  
Activity V - pp. 144 and 147 (Teach centimeter values of gameboard - rectangles within purple playing area and goal area.)

#### **OCTOBER**

- PAR 55  
Continue practice with one and two way differences and introduce three and four way differences. (Adventures: Activity V - pp. 40-42 (Attribute Tower Game) is an enjoyable way to practice these skills.)
- RAMROD  
Adventures: Activity V - pp. 144 and 147 (Measuring Values in the Purple Playing Area and Goal Area of Gameboard)  
Adventures: Activities VII and VIII - pp. 154-157 (Teach students the complements of number values in purple-playing area.)  
Investigations: pp. 3-6 (Ramrod Combos) and pp. 8-10 (Make a Capture)
- FIAR  
Game: Teach game using the blocking chips.

#### **NOVEMBER**

- PAR 55  
Game: Teach rules and practice **without** bump rule.  
Investigations: Select appropriate pages 3-19.
- SUM DOMINOES & DICE  
Adventures: Activity II - pp. 76-77 (Domino Addend Hunt)  
Teach placement rules of game and how to use doubles.  
Investigations: pp. 3-4
- RAMROD  
Game: Teach rules and practice **without** the recycling box.
- FIAR: Continue to practice.

**DECEMBER**

- PAR 55  
Game: Teach the “Bump” rule and practice game with all rules.  
Investigations: Select appropriate pages 20-23.
- RAMROD  
Game: Introduce the recycling of rods in the center box; continue practice of game and how to defend three and four step captures.
- KWATRO-SINKO  
Adventures: Activity I - pp. 213-214 (Teach all possible combinations for getting an answer of four or five.)  
Investigations: p. 3 (Kwatro-Sinko Recording Sheet)
- SUM DOMINOES & DICE  
Adventures: Activity V - pp. 79-82 (worksheets)  
Game: Teach all rules and practice.
- FIAR: Continue to practice.

**JANUARY**

- KWATRO-SINKO  
Game: Teach rules and practice.
- Teach tournament rules to Sum Dominoes & Dice.
- FIAR  
Investigations: pp. 3-8
- Continue practice of all 5 games.

**FEBRUARY**

- Teach tournament rules to Par 55 and Ramrod.
- Continue practice of all 5 games.
- PAR 55  
Investigations: Select appropriate pages 24-33.

**MARCH AND APRIL**

- Teach tournament rules to FIAR and Kwatro-Sinko.
- Continue to practice all 5 games using tournament rules.
- RAMROD  
Investigations: Select appropriate pages 11-17.
- SUM DOMINOES & DICE  
Investigations: Select appropriate pages 5-18.
- KWATRO-SINKO  
Investigations: Select appropriate pages 4-12.

**IF TIME PERMITS:**

Refer to Adventures in Problem Solving Book I and Investigation Exercises Book I for many other additional activities that will enrich students’ mathematical problem-solving skills.

## **DIVISION III (Grades 4-5)**

### **MONTH BY MONTH INSTRUCTIONAL SEQUENCE FOR THE MATHEMATICS PENTATHLON® GAMES**

(Linking the Games With Adventures in Problem Solving Book II  
and Investigation Exercises Book II)

#### **SEPTEMBER**

- STARS & BARS  
Adventures: Activities I and II - pp. 197-198 (Investigate the Stars & Bars Cards.) and Activity IV - p. 199 (One and Two Way Difference Chains)
- JUGGLE  
Adventures: Activity II - pp. 10-12 (Constructing Polyominoes) and Activity VI - pp. 14-15 (Juggle Board Spatial Cover Task)  
Adventures: (if time permits) Scarce Resources
- QUEEN'S & GUARDS  
Game: Teach rules and practice.

#### **OCTOBER**

- STARS & BARS  
Continue practice with one and two-way differences and introduce three and four-way differences. (Adventures: Activity VI - p. 201 is an enjoyable way to practice these skills.) Activity V - pp. 199-200 (What's the Difference?)
- JUGGLE  
Game: Teach rules and practice.
- QUEEN'S & GUARDS: Continue to practice.

#### **NOVEMBER**

- STARS & BARS  
Adventures: Activities XI and XII - pp. 207-209 (Progressive Lead-Ins Including One and Two-Way Scoring)
- JUGGLE  
Adventures: Activity XVIII - p. 39 (Polyomino Perimeter Relations)  
Continue to practice game.
- CONTIG 60  
Adventures: Activity II - pp. 115 and 117 (Cover Up II)  
Game: Teach rules with only "five-in-a-row" way to win.
- QUEEN'S & GUARDS: Continue to practice.

#### **DECEMBER**

- STARS & BARS  
Adventures: Activities XIII and XIV - pp. 208, 210 and 211-212 (Progressive Lead-Ins Including Three and Four Way Scoring)  
Investigations: Select appropriate pages 3-14.

- **JUGGLE**  
Investigations: pp. 3-4 (Juggle Pents and Tetra Pents - Investigate the maximum number of pentominoes that can be placed on 9 x 9 grid without vertices or edges touching.)
- **CONTIG 60**  
Game: Teach second way to win by scoring and continue to practice.
- **QUEEN'S & GUARDS** - Continue to practice.

## **JANUARY**

- **STARS & BARS**  
Game: Teach rules and practice game using only the central-playing area of gameboard.  
Investigations: pp. 15-17
- **CONTIG 60**  
Adventures: Activity X - pp. 130 and 132 (Calculator Challenge)  
Investigations: Select appropriate pages 3-12.
- **FAB-A-DIFFY**  
Adventures: Activity V, VI, VIII, and IX - pp. 168-171 (Investigate bars and equivalence.)  
Investigations: Select appropriate pages 3-9.
- **JUGGLE and QUEEN'S & GUARDS**: Continue to practice.

## **FEBRUARY**

- **STARS & BARS**  
Game: Teach and practice all rules including scoring in outer rectangle of gameboard.
- **FAB-A-DIFFY**  
Adventures: Activity X - pp. 171-172 and Activities I and II - pp. 175-177 (Frac Fact)  
Game: Teach rules and practice.  
Investigations: pp. 10-12 (FAB) and pp. 3-9 (Frac Fact)
- Teach tournament rules to Juggle, Queen's & Guards, and Contig 60.

## **MARCH AND APRIL**

- Teach tournament rules to Stars & Bars and FAB-A-DIFFY.
- Continue to practice all 5 games using tournament rules.
- **STARS & BARS**  
Investigations: pp. 18-20
- **CONTIG 60**  
Adventures: Activity XI - pp. 132 and 134-135 (Contig 60 Worksheets)  
Investigations: pp. 13-15
- **QUEEN'S & GUARDS**  
Investigations: pp. 3-10

## **IF TIME PERMITS:**

Refer to Adventures in Problem Solving Book II and Investigation Exercises Book II for many other additional activities that will enrich students' mathematical problem-solving skills.

**DIVISION IV (Grades 6-7)**  
**MONTH BY MONTH INSTRUCTIONAL SEQUENCE FOR THE**  
**MATHEMATICS PENTATHLON® GAMES**  
 (Linking the Games With Adventures in Problem Solving Book II  
 and Investigation Exercises Book II)

**SEPTEMBER**

- **PRIME GOLD**  
 Adventures: Activity V (Factors, Patterns, and Rectangles - pp.142-144)  
 Investigations: pp. 6-7  
 Game: Shade in all prime numbers on smaller gameboard in game manual.
- **PENT 'EM IN**  
 Adventures: Activity II Juggle, Constructing Pentominoes - pp. 10-12)  
 Adventures: Activities II, III, and IV (pp. 69-75)
- **FRAC FACT**  
 Adventures: Activities V-XI (Fab-A-Diffy chapter on equivalence and addition - pp. 168-172)
- **REMAINDER ISLANDS**  
 Game: Teach rules and practice.

**OCTOBER**

- **PRIME GOLD**  
 Game: Teach rules without Goldbach's Conjecture and chip removal rules.
- **PENT 'EM IN**  
 Investigations: pp. 3-8 (Allow students to explore movements with pentominoes.)
- **FRAC FACT**  
 Adventures: Activities I and II (subtraction and Capture the Difference - pp. 175-177)
- **REMAINDER ISLANDS**  
 Adventures: Activity IV (Remainder Islands Worksheets - pp. 112-114)
- **FRACTION PINBALL**  
 Adventures: Activity II (Fraction Pinball Sum Search - pp. 187-188)

**NOVEMBER**

- **PRIME GOLD**  
 Game: Teach Goldbach's Conjecture rule.  
 Adventures: Activity VI (Factor Matrices - pp. 144-150) - if time permits
- **PENT 'EM IN**  
 Game: Teach rules and practice.
- **FRAC FACT**  
 Game: Teach rules and practice using only addition and subtraction.
- **FRACTION PINBALL**  
 Adventures: Activity III (Fraction Pinball Worksheets - pp. 187, 189-190)

**DECEMBER**

- **PRIME GOLD**  
 Game: Teach "Shaft" Chip Removal rules.

Investigations: pp. 3-5

Adventures: Activity IX (Prime Gold Worksheets - pp. 153, 156-158)

- PENT 'EM IN

Investigations: pp. 9-12

- FRAC FACT

Investigations: pp. 3-9

Adventures: Activities VI and VII (multiplication and division - pp. 181-183, 224)

- FRACTION PINBALL

Adventures: Activity IV (Fraction Pinball Wizard - pp. 191, 193-195)

- REMAINDER ISLANDS

Adventures: Activity V (Estimate & Calculate - p. 112)

- Continue to practice Remainder Islands and Pent 'em In.

## **JANUARY**

- PRIME GOLD

Game: Teach "Diagonal Prime Veins" Chip Removal rules.

Investigations: pp. 8-12

- PENT "EM IN

Investigations: pp. 13-14 - if time permits

- FRAC FACT

Game: using all four basic operations and tournament rules

Investigations: pp. 10-17

- REMAINDER ISLANDS

Investigations: pp. 3-10

- FRACTION PINBALL

Game: Teach rules and practice.

- Continue to practice all 5 games.

## **FEBRUARY**

- PRIME GOLD

Investigations: pp. 13-21

Game: Teach tournament rules.

- Teach tournament rules to PENT 'EM IN.

- FRACTION PINBALL

Investigations: pp. 3-6

- Continue to practice REMAINDER ISLANDS and FRAC FACT.

## **MARCH AND APRIL**

- Teach tournament rules to REMAINDER ISLANDS, FRAC FACT, and FRACTION PINBALL.

- Continue to practice all 5 games using tournament rules.

**IF TIME PERMITS:** Encourage students to write the tournament rules in their own words.

### **IF TIME PERMITS:**

Refer to Adventures in Problem Solving Book II and Investigation Exercises Book II for many other additional activities that will enrich students' mathematical problem-solving skills.