A Dazzling Day of Dice, Dominoes, Decks of Cards . . . and Technology

Grade Level: 1st
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Length of Unit: 7 lessons-an average of an hour for each lesson including extension activities

I. **ABSTRACT**

The children will discover how to solve word problems and mathematical equations through hands-on manipulatives and technology. These resources can be used as class starters, sponge activities, and as an aid to reinforce concepts. They are very versatile and highly motivating and can be used individually, in groups, or with an entire class. This unit is intended to be used with first grade, but these tools can be used in various grade levels and are readily available for most. The lessons are intended to be used throughout the year as a reinforcement tool and can be modified for any skill that is to be learned.

II. **OVERVIEW**
A. Concept Objectives
    1. 1.1.1- Understand numbers, ways of representing numbers, relationships among numbers, and number systems. (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
    2. 1.2.1- Understand meanings of operations and how they relate to one another. (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
    3. 1.2.3- Solve problems, compute fluently, and make reasonable estimates (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
B. Core Knowledge Sequence
    1. Know the meaning of a plus sign. pg.35
    2. Know addition facts to 10 + 10 (untimed mastery). pg.35
    3. Add in any order. pg 35
    4. Know how to write addition problems horizontally and vertically. pg.35
    5. Know that when you add three numbers you get the same sum regardless of grouping of addends. pg.35
    6. Know subtraction facts corresponding to addition facts (untimed mastery).pg. 36
    7. Understand subtraction as "taking away." pg 36
    8. Know what a "difference" is. pg. 36
    9. Know how to write subtraction facts horizontally and vertically. pg.36
    10. Recognize place value: ones, tens, hundred. pg. 35
    11. Identify more and less; counting how many more or how many less. pg. 35
    12. Given a number, identify one more and one less, ten more and ten less. pg. 35
    13. Use tallies. pg. 35
    14. Establish concepts of likeness and difference by sorting and classifying objects according to various attributes: size, shape, color, amount, function, etc. pg. 35

C.   Skills Objectives
1.   Read and write numbers to 18.
2.   Model and create addition and subtraction problem situations with concrete objects and create corresponding number sentences.
3.   Learn and apply basic addition and subtraction facts with sums to 12 using concrete models.
4.   Identify patterns in related addition and subtraction sentences (Fact families with sums to 18).
5.   Use tools such as real objects, manipulatives, and technology to solve problems.
6.   Record observations using objects, words, pictures, numbers, and technology.
7.   Relate formal language to mathematical language and symbols.
8.   Determine how many times they will roll a certain number using die.
9.   Record information using tally marks.
10.   Determine if a number of objects is more or less.
11.   Determine how many more or how many less a number is by comparing two numbers.
12.   Write numerals in the standard form.
13.   Use playing cards to show the ones and tens place.

III.   BACKGROUND KNOWLEDGE
A.   For Teachers
1.   Hirsch, Jr., E.D. *What Your First Grader Needs to Know*. New York: Dell Publishing, 1991, ISBN# 0-385-31026-9.
2.   www.eInstruction.com- this website explains how to purchase CPS (Classroom Performance System). It also provides online tutorials on how to use them.
3.   www.gtcocalcomp.com/interwriteschoolpad.htm- this website explains how to purchase a Teamboard and a School Pad. It also provides online tutorials on how to use them.
B.   For Students
1.   Students should have a basic knowledge of numbers appropriate to grade level.
2.   Students should have a basic knowledge of a deck of cards (minus face cards.)
3.   Students should have a basic knowledge of dominoes.
4.   Students should have a basic knowledge of dice.
5.   Students should already have a basic understanding of how to use classroom technology.
6.   Students should understand that addition is the concept of joining together.
7.   Students should understand that subtraction is the concept of taking away.
8.   Students should add and subtract to 10 using concrete objects.
9.   Students should recognize the meaning of the plus sign.
10.   Students should recognize the meaning of the minus sign.

IV.   RESOURCES
A.   Long, Lynette. *Domino Addition*
B.   Leedy, Loreen. *Mission Addition*
C.   Long, Lynette. *Dealing with Addition*
D.   Leedy, Loreen. *Subtraction Action*
E.   Herman, Gail. *Bad Luck Brad*
F.   Buckets of foam dice
G.   Buckets of dominoes
H.   Decks of cards
I.   Interwrite School Pad
J.   VCR
K.   Teamboard- www.teamboard.com (or overhead projector)
L.   Projector
M.   School Pad website- www.gtcocalcomp.com/interwriteschoolpad.htm
N.   Holtzman, Caren. *No Fair!*
O.   Keenan, Sheila. *More or Less a Mess*
P.   CPS - www.eInstruction.com
Q.   Herman, Gail. *The Blast off Kid*

V.   LESSONS
Lesson One: What is the Sum? (3 hours over a 3-day period)
A.   Daily Objectives
  1.   Concept Objective(s):
    a.   Understand meanings of operations and how they relate to one another (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
    b.   Solve problems, compute fluently, and make reasonable estimates (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
  2.   Lesson Content:
    a.   Problem solving using addition
  3.   Skill Objectives:
    a.   The student will apply manipulatives to develop strategies for adding whole numbers (Tennessee State Standards 1.1.2a.)
    b.   The student will identify whether a number is more or less using manipulatives to solve a problem (Tennessee State Standards 1.1.3b.)
B.   Materials
  1.   Book-*Domino Addition*- Scan book into computer to read to class
  2.   Teamboard
  3.   KWL template for computer
  4.   School Pad
  5.   Pencils
  6.   Dominoes
  7.   Playing Cards
  8.   Appendix A and A1
  9.   Number mats
  10.   CPS remotes
C.   Key Vocabulary

1. Addition/ adding/ add
2. Plus sign
3. Equal
4. more/less
5. Sum
D. Procedures/Activities
1. Intro- Complete a KWL chart about what the students know about addition, what they want to learn about addition on the Teamboard.
2. Read *Domino Addition* aloud to students and discuss (book is enlarged on Teamboard)
3. After reading the book go back to the Teamboard and allow the students to fill in what they learned after listening to and discussing the book.
4. Use Teamboard to allow students to practice basic problems.
5. Use the giant domino on the school pad to allow a child to circle the dots on one side of the domino.
6. Then ask another student to circle the dots on the other side of the domino.
7. Allow another student to come up and count the total amount of dots on the large domino.
8. Allow a student to write the addition problem created under the domino.
9. Allow the students to practice several more problems using more giant dominoes.
10. Tell students that when they play their game with their partner they are going to count the dots on each side just like they did on the Teamboard and come up with the total number of dots (sum.)
11. After the teacher has reviewed several examples of addition, children will then work with their partner to solve addition problems.
12. Each pair of students will receive a small bag of dominoes and number mats.
13. The students will use the dominoes to make sums listed on the mats. (See Appendix A and Appendix A1 for game materials and instructions)
14. The teacher will monitor and assist the groups of students.
15. After twelve to fifteen minutes of practice, ask children to clean their station and to have their eyes and ears toward the board when they are done.
16. Before assessing, ask the students to think about other ways to make sums of 3, 4, 5, 6, 7, 8, 9, and 10.
17. After discussion of sums, have students use their remote controls (CPS) to answer the five questions on the Teamboard.
E. Assessment/Evaluation
1. CPS (Classroom Performance System) remotes – Four basic addition equations will need to be solved by each student and one word problem using objects to create addition equations, for a total of five addition problems.
2. The CPS unit will score each child's answers and report how many children missed each question. It will also provide the teacher with study

guides to send home and a graph that represents the percentage of children who mastered the standards designated for the lesson.
3. Follow-up activities – Attached is another addition game using dominoes for children to play to reinforce their addition skills. *See Attached Handouts* (Appendix B, B1.)

Lesson Two: What is the Difference? (3 hours over a 3-day period)
A. Daily Objectives
    1. Concept Objective(s):
        a. Understand meanings of operations and how they relate to one another (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
        b. Solve problems, compute fluently, and make reasonable estimates (Tennessee State Math Standard 1.1, 1.1.2, 1.1.3)
    2. Lesson Content:
        a. Problem solving using Subtraction
    3. Skill Objectives:
        a. The student will apply manipulatives to develop strategies for subtracting whole numbers (Tennessee State Standards 1.1.2a.)
        b. The student will identify whether a number is more or less using manipulatives to solve a problem (Tennessee State Standards 1.1.3b.)
        c. The student will use manipulatives to demonstrate subtraction sentences (2.3.a.)
B. Materials
    1. Book-*Subtraction Action*
    2. Teamboard
    3. KWL template for computer
    4. School Pad
    5. Playing Cards (at least 10 sets)
    6. Counters
    7. Scratch paper
    8. Pencils
    9. Card shuffling machine
    10. Minus This, Minus That Game -Appendix C and C1
    11. CPS (Class Performance System)
C. Key Vocabulary
    1. subtraction/take away/minus
    2. Minus sign
    3. Equal sign
    4. Less
    5. Cross out

D. Procedures/Activities

1. Intro- Complete a KWL chart about what the students know about subtraction, and what they want to learn about subtraction on the Teamboard.
2. Read *Subtraction Action* aloud to students and discuss.
3. After reading the book go back to the Teamboard and allow the students to fill in what they learned after listening to and discussing the book.
4. Use Teamboard to allow students to practice basic subtraction problems.
5. Stamp a certain amount of objects on the team board and allow a student to come up and write the number of objects down on the team board (you can use the School Pad.)
6. Then ask another student to come up and take away some of the objects (cross them out.)
7. Allow a student to come up and write down the number of objects that were crossed out along with a minus sign.
8. Choose a student to come up and count the amount that is left and record it on the board (or use School Pad). Explain to the students that the answer is called the difference. They are going to be looking for the difference between two numbers whenever they do a subtraction problem.
9. Go over the subtraction sentence/problem with the students and how to write a subtraction sentence. Tell students to always begin with the total amount of objects when writing their problem. Then write the amount taken away after the minus sign and then write the amount that is left after the equal sign.
10. Allow the students to practice several more problems using the objects on the Teamboard. Students can even draw circles, squares, triangles, or any other object by coming up to the Teamboard or using the School Pad.
11. Show students a deck of cards. Discuss with students how to use the cards. Explain that we will not use any face cards (King, Jack, or Queen.) Explain to students that they will be only looking at the numbers on the cards when they do the next activity.
12. Pair students up with a partner to solve subtraction problems using the decks of cards. Allow them to play the game Minus This, Minus That (See Appendix C and C1 for game and game instructions.)
13. Each pair of students should have a deck of cards, counters, and some paper and a pencil.
14. Explain to students that they will use the card shuffling machine to shuffle the cards. They will then place the cards in an even stack of two.
15. One student will choose a card from each stack and ask themselves "Is my first card more or less than my second card?"
16. If the card is more the student will then ask themselves, how much more and write the problem down on paper. (For example if they pull a 10 and a 7, they will write 10-7=3.) They can use counters to help them answer the problem.
17. The next partner will then have a chance to pull cards and complete a problem.

18. The teacher will monitor and assist the groups of students.
19. After twelve to fifteen minutes of practice, ask children to clean their station and to have their eyes and ears toward the board when they are done.
20. Before assessing, ask the students to discuss some of the problems they completed and the differences.
21. After discussion of differences, have students use their remote controls to answer the five questions on the Teamboard.

E. Assessment/Evaluation
1. CPS (Classroom Performance System) remotes – Four basic subtraction equations will need to be solved by each student and one word problem using objects to create subtraction equations, for a total of five subtraction problems.
2. The CPS unit will score each child's answers and report how many children missed each question. It will also provide the teacher with study guides to send home with the children and a graph that represents the percentage of children who mastered the standards designated for the lesson.
3. Follow-up activities – Attached is another subtraction game for the children to play to reinforce their subtraction skills. *See Attached Handouts* (Appendix D, D1.)

Lesson Three: Addition and Subtraction Relationships (3 hours over a 3-day period)
A. Daily Objectives
1. Concept Objective(s):
   a. 1.2.1- Understand meanings of operations and how they relate to one another (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
   b. 1.1.3- Solve problems, compute fluently, and make reasonable estimates (Tennessee State Math Standard 1.1, 1.1.2, 1.1.3)
2. Lesson Content:
   a. Problem solving using addition and subtraction relationships
3. Skill Objectives:
   a. The student will apply manipulatives to develop strategies for subtracting and adding whole numbers (Tennessee State Standards K-2.1.2a.)
   b. The student will identify whether a number is more or less using manipulatives to solve a problem (Tennessee State Standards K-2.1.3b.)
   c. The student will determine that addition and subtraction facts are related (Core Knowledge Sequence book pg.36.)
B. Materials
1. Book- *Dealing with Addition* (Scan book onto Teamboard)
2. Teamboard
3. Dominoes (at least 5 sets)
4. School Pad
5. Pencils

6. Appendix E and E1
C. Key Vocabulary
    1. addition/adding/sum/total
    2. subtraction/take away/minus/ difference
    3. Minus sign
    4. Equal sign
    5. Fact family
    6. Largest number
    7. Related numbers
D. Procedures/Activities
    1. Intro- Ask students how are people in a family related? What makes someone related to another person? Allow students to answer and discuss. Inform students that today we are going to talk about how some addition and subtraction facts are related just like people in a family are related.
    2. Read *Dealing with Addition* aloud to students and discuss.
    3. Discuss how some addition facts can be switched around to make another problem that is related.
    4. Write a problem on the Teamboard to show students ($3+2=5$ and $2+3=5$.)
    5. Inform students that the way to write a related addition fact is to switch the two numbers that are being added together around and keep the same answer.
    6. Tell students there can be some subtraction problems made from the two addition problems that you wrote on the Teamboard.
    7. Write these two subtraction problems on the Teamboard ($5-3=2$ and $5-2=3$.)
    8. As you write them on the team board tell students how to write the related subtractions facts.
    9. Tell students to always choose the answer from the related addition problems to begin the related subtraction facts. Then you choose one of the other numbers to place after the minus sign (Ex. $5-3=$) and then choose the remaining number to be the answer (Ex. $5-3=2$.)
    10. For the next subtraction problem choose the answer of the addition problems to be first. Then choose the first number of the other addition problem to place after the minus sign (Ex. $5-2=$) and then choose the remaining number to be the answer.
    11. Use Teamboard to allow students to practice writing related addition and subtraction problems (fact families.)
    12. Allow students to practice also by choosing what problems are needed to complete a fact family. For example you write $6+2= 8$, and $2+6=8$ on the Teamboard. Allow students to come up and write the subtraction problems that go along with this fact family. The students should come up and write $8-6=2$ and $8-2=6$
    13. Pair students up with a partner to play *Fun with Fact Families*. Give each group a set of dominoes, handout Appendix E1, and a pencil. (See Appendix E for game instructions.) Explain to students that they will choose a domino and count the dots on one side and then write that

number down and a plus sign after the number. Then they will count the dots on the other side and write that number down after the plus sign. Then they will count how many dots in all and write that number down after the equal sign. (Ex. 4+3=7)

14. Next the student will write the other related addition and subtraction facts (The facts in the same family.)
15. Each partner will take turns choosing a domino and writing the related addition and subtraction facts.
16. When each section of their paper is filled up they must allow their partner to check their answers to make sure they wrote the correct problems.
17. The teacher should monitor and assist the groups of students.
18. After several minutes, ask children to clean their station and to have their eyes and ears toward the board when they are done.
19. Before assessing, ask the students to discuss some of the fact families they completed. Allow them to use the School Pad to write them down so they show up on the Teamboard.

E. Assessment/Evaluation
1. The teacher will walk around and observe students and give feedback.
2. The sheet that the students recorded their related facts (fact families) will be checked for understanding.
3. Follow-up activities – Play *Fast Fact Family Frenzy* (See Appendix F, F1.)

Lesson Four: Place Value (2 hours over a 1-day period)
A. Daily Objectives
1. Concept Objective(s):
   a. 1.1.1- Understand numbers, ways of representing numbers, relationships among numbers, and number systems. (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
   b. 1.1.p-Represent numbers in flexible ways using a variety of representations, such as 23 as 23 ones. (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
2. Lesson Content:
   a. Recognize place value: ones, tens, and hundreds
3. Skill Objectives:
   a. The student will write numerals in the standard form.
   b. The student will use dice to show the ones and tens place.
B. Materials
1. Teamboard
2. Pencils
3. Appendix
4. Base ten blocks
5. Place value mats
6. Dice
7. Appendix
8. School Pad

9. Recording sheet
C. Key Vocabulary
1. Place value
2. Ones
3. Tens
4. Base ten blocks
D. Procedures/Activities
1. Intro- Write a number on the board (Ex. 42.) Ask students if there is a certain order to how you should write a number? Inform students that today we are going to talk about how each number has a certain place that it has to be in and that each place has a name. Show students how to show that number using the place value mat.
2. Write the words ones, tens, and hundreds on the team board.
3. Write the number 37 on the Teamboard.
4. Tell students that the number 7 is in a certain place called the ones place. Tell the students that the 3 is in a special place called the tens place. Write several more numbers on the Teamboard and explain to the students which number is in the tens spot and which number is in the ones spot.
5. Using base ten blocks on the Teamboard, show students how to represent the tens using the tens stick base ten block and how to represent the ones using the ones block.
6. Show students how to represent numbers using the base ten blocks. Show them how to make these numbers (33, 24, 56, 13, 18, 39, and 50) and also how to write the number word out to the side of the numbers. You may pass the School Pad around instead of having the students come up to the Teamboard.
7. Allow several students to come up and show some more numbers using the base ten blocks.
8. Pair students off with a partner. Give each pair some dice, base ten blocks, place value mats, Appendix G1, recording sheet, and a pencil. (See Appendix G for game instructions and handouts.)
9. The teacher should monitor and assist the groups of students.
10. After several minutes, ask children to clean their station and to have their eyes and ears toward the board when they are done.
11. Before assessing, ask the students to discuss some of the numbers that the students rolled with their dice. Allow them to show what they did by passing the School Pad around for them to write their number down and show it using base ten blocks.
E. Assessment/Evaluation
1. The teacher will walk around and observe students and give feedback.
2. The sheet that the students record their numbers on will be checked for understanding.
3. Follow-up activities – The learner will use straws to show tens and ones. Give students a number and allow them to use a bundle of straws to represent the tens and use individual straws to represent the ones. See Appendix H, H1 for an additional place value game.

Lesson Five: More/Less (2 hours over a 1-day period)
A.   Daily Objectives
       1.   Concept Objective(s):
              a.   1.1.1- Understand numbers, ways of representing numbers,
                     relationships among numbers, and number systems. (Tennessee
                     State Math Standard 1.1.1, 1.1.2, 1.1.3)
              b.   1.1.r- Compare two whole numbers to 100 using the appropriate
                     symbol(including <, >, =) (Tennessee State Math Standard 1.1.1,
                     1.1.2, 1.1.3)
       2.   Lesson Content:
              a.   More/Less- Determine if a certain number is more or less than a
                     given number.
       3.   Skill Objectives:
              a.   The student will determine if a number of objects are more or less.
              b.   The student will determine how many more or how many less a
                     number is by comparing two numbers.
B.   Materials
       1.   Teamboard
       2.   Pencils
       3.   More or Less Game-Appendix I
       4.   2 decks of cards
       5.   Coins
       6.   Recording sheet-Appendix I1
       7.   http...//atschool.eduweb.co.uk/toftwood/resources.html
       8.   School Pad
       9.   Book- *More or Less a Mess*
       10.   Items in the classroom (books, crayons, pencils, scissors, glue)
C.   Key Vocabulary
       1.   More
       2.   Less
       3.   Add
       4.   Subtraction
       5.   How many more
       6.   How many less
D. Procedures/Activities
       1.   Intro- Allow two students to pick a number to write on the School Pad.
              Discuss what two numbers the students picked. Discuss which number is
              more of the two and which number is less. Pull up the 100's chart on the
              Teamboard to show the students the numbers they chose and which one is
              more and which one is less. Tell students that today we are going to
              discuss how to determine if a number is more or less.
       2.   Read the book *More or Less a Mess*.
       3.   After reading the book, discuss how the girl began to clean up her room?
              (*She began to sort the objects in her room)(How did she sort the items in
              her room?*)

4.   Show students two stacks of school supplies. Ask students to guess which one is more and which one is less? Ask students to explain their answers.
5.   Show students another stack of school supplies and ask them to guess which one is more or less? Ask students to explain their answers.
6.   Place a deck of cards face down. Choose two students to pick a card. Have the students write down their numbers side by side on the school pad. Ask another student which number is more. The student that had the number that was more gets to circle the number.
7.   Allow two more students to choose a number. Have them write their numbers on the School Pad. Ask another student which number is less. The student that had the number that was less gets to circle the number.
8.   Repeat several times asking students to choose the number that is more or less to give students ample practice
9.   Next show students how to write addition and subtraction sentences using the two numbers that they choose. Explain to them that this will help them determine which number is more or less. How many more? How many less?
10.   For example, pick two more students to pull a card. Ask them which number is more. Allow them to circle the number that is more. Then allow them to write an addition sentence and subtraction sentence. Example if the students choose 10 and 3 they can write these two problems $3+7=10$ and $10-3=7$. (This is just to allow them to review writing and solving addition and subtraction problems)
11.   Pair students up with a partner to play the game More or Less. See Appendix I for directions.
12.   The students will need 2 decks of cards, a coin, recording sheets, and pencils (See Appendix I and I1.)
13.   Allow students to play for at least 10-15 minutes.
14.   After 15 minutes instruct the students to clean up and put their things away.
15.   Discuss with students what numbers they pulled and what addition and subtraction facts they wrote.

E.   Assessment/Evaluation
1.   The teacher will walk around and observe students and give feedback.
2.   The recording sheets will be taken up to check for student understanding.
3.   Follow-up activities – The learner will use dice to determine if the number of dots on their dice is more or less than the number on their partner's dice. See Appendix J, J1.

Lesson Six: Probability (2 hours over a 1-day period)
A.   Daily Objectives
1.   Concept Objective(s):
      a.   1.1.1- Understand numbers, ways of representing numbers, relationships among numbers, and number systems. (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)

b.   1.3.9- Apply the guess and check strategy to solve routine and non-routine problems
    2. Lesson Content:
        a.   Probability- Determine (guess) how many times something will occur based on the given information.
    3. Skill Objectives:
        a.   The student will determine how many times they will roll a certain number using dice and tally marks.
        b.   The student will record information using tally marks.
        c.   The student will explain why they rolled a certain number more than others.
B. Materials
    1.   Teamboard
    2.   Pencils
    3.   How Many Ways? – Appendix K
    4.   Die
    5.   Tally sheet- Appendix K1
    6.   Recording sheet- Appendix K2
    7.   Book- *No Fair!*
    8.   Book- *Bad Luck Brad*
    9.   School Pad
    10.   Chocolate chip cookies
    11.   Oreo cookies
    12.   Coins
    13.   Marbles in a bag (2 bags of marbles)
    14.   Colored squares in a bag
    15.   Which color is next? Appendix L and L1
    16.   Colored dice (place different color circles on the die you already have)
    17.   Colored cubes
    18.   Colored pencils
C. Key Vocabulary
    1.   Probability/probable chance
    2.   Tally marks
    3.   Chance
    4.   Fair
    5.   More likely
D. Procedures/Activities
    1.   Intro- Display a plate of cookies (Oreos and Chocolate chip cookies). Place more Oreos on the plate than chocolate chip cookies. Ask students what are the chances that someone could come up and pick a chocolate chip cookie without looking? *Allow students to respond. Students might say that it is not a good chance because there are more Oreo cookies than chocolate chip cookies.* Inform students that today we are going to discuss probability and fair chances. (Tell them probability means making a guess based on the information you have in front of you)

2. Repeat several times giving each student a chance and change the number of cookies.
3. Read the book *No Fair!*
4. After reading the book, discuss what things were not fair and why they were not fair. Discuss what things were fair and why they were fair. (Write answers on Teamboard.)
5. Discuss what makes some things fair and not fair?
6. Example- Tell students that you all are going to play a game. If you choose a green marble out of the bag then you win. Have two bags. One bag should have mostly green marbles and a few red marbles. Have another bag with mostly red marbles and a few green marbles. Choose students to come up and pick a marble. Before they pick a marble, ask the class if they think the game is fair? Ask them which person do they think is going to choose the green marble. The first person in front of bag 1 or the second person in front of bag 2. Ask them to explain their answer. (*Allow students to respond. They should say that the first person has a greater chance of getting a green marble because there are more marbles in the first bag. The second person does not have a great chance because there are mostly red marbles in the second bag*)
7. Do some more examples changing the color of marbles. Continue to ask the students questions.
8. Next display a bag of colored squares in a bag. Show students what colors are in the bag. Allow students to guess what color will be pulled the most based on what they saw in the bag. Allow the students to write it on the School Pad and then allow someone to pull a color. Check answer and discuss. Record the answers on the School Pad by each color using tally marks. *(Example- Blue-1)* Explain to students how to count tally marks and write them.
9. Complete more problems. Continue to record the findings using tally marks. For instance if blue is pulled again record *Blue-11*.
10. After practicing discuss which color had the most tally marks. What does that mean? (*Students could say that there was a better chance at pulling blue because there were more blue squares in the bag than any other color and we pulled blue more than any color.*)
11. Place students in groups of 2-4 players.
12. Pass out Appendix K. Students will need die, tally sheets, pencils, and recording sheets. (See Appendix K1 and K2 for tally sheets and recording sheets.)
13. Make sure they roll the dice a total of 25 times.
14. Allow students to play for at least 10-15 minutes.
15. After time is up, allow the students to clean up and put their things away. Ask students to share results on their tally and recording sheets. Discuss results and questions on the recording sheet.
16. To close, read the book *Bad Luck Brad.* Discuss why Brad's luck was good sometimes and why it was bad sometimes? What events caused him to have bad and good luck?

E. Assessment/Evaluation
    1. The teacher will walk around and observe students and give feedback.
    2. The recording sheets will be taken up to check for student understanding.
    3. CPS (Classroom Performance System) remotes – Five probability questions will be shown on the Teamboard for the students to answer using the remotes.
    4. The CPS unit will score each child's answers and report how many children missed each question. It will also provide the teacher with study guides to send home and a graph that represents the percentage of children who mastered the standards designated for the lesson.
    5. Follow-up activities – Attached is another game dealing with probability (Which color is next?) See Appendix L, L1, and L2.

Lesson Seven: Introduction to Dominoes and Playing Cards: How to use them?
A. Daily Objectives
    1. Concept Objective(s):
        a. 1.1.1- Understand numbers, ways of representing numbers, relationships among numbers, and number systems. (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
        b. 1.2.1- Understand meanings of operations and how they relate to one another (Tennessee State Math Standard 1.1.1, 1.1.2, 1.1.3)
    2. Lesson Content:
        a. Dominoes and Playing Cards- How to use the two correctly
    3. Skill Objectives:
        a. The students will determine the correct way to use dominoes.
        b. The students will determine the correct way to use playing cards.
        c. The students will identify the value of the cards (Ex. Ace-means 1)
B. Materials
    1. Teamboard
    2. Set of playing cards for each group of four
    3. Set of dominoes for each group of four
    4. Book- *Dealing with Addition*
    5. Book- *Domino Addition*
    6. School Pad
    7. CPS remotes
C. Key Vocabulary
    1. Halves
    2. Deck
    3. Face
    4. Heart
    5. Diamond
    6. Spade
    7. Club
    8. Ace
    9. King
    10. Queen

11.   Jack
        D.   Procedures/Activities
                1.   Intro- Tell students that over the course of the school year, during math,
                      they will begin to use two manipulatives throughout many of their paired
                      activities and center activities. The manipulatives that we will be using
                      are playing cards and dominoes. We will use other manipulatives
                      throughout the year but today we are going to discuss how to use playing
                      cards and dominoes during a game.
                2.   Make sure that the students are sitting in groups of four.
                3.   Read the book *Dealing with Addition- Scan book onto the computer and
                      project for all to see.*
                4.   As you read the book stop on each page and discuss the page with the
                      students. Allow the students to pull out the cards and look at them. For
                      example the first black page explains to the students about the different
                      cards. Allow the students to pull out those cards and look at them as you
                      read about the different cards.
                5.   Go through the whole book like this allowing the students to do the
                      different activities in the books using the cards. This will allow the
                      students to become comfortable with using playing cards. Some pages
                      even ask the students to add the numbers on the cards. This is just like
                      some the games they will play in the unit.
                6.   Take the playing cards up and pass out dominoes to the groups of students
                7.   Read the book *Domino Addition. - Scan book onto the computer and
                      project for all to see.*
                8.   As you read the book stop on each page and allow the students to look at
                      the dominoes and observe them and complete the activities on each page.
                9.   After completing this book allow the students to discuss with their group
                      what they learned about playing cards and dominoes. Choose someone
                      from the group to show the rest of the class what they learned while using
                      the cards and dominoes.
        E.   Assessment/Evaluation
                1.   The teacher will walk around and observe students and give feedback.
                2.   The teacher will also listen to the group discussion and presentation to
                      check for understanding.
                3.   CPS (Classroom Performance System) remotes – Five questions dealing
                      will dice and dominoes will be shown on the Teamboard for the students
                      to answer using the remotes.
                4.   The CPS unit will score each child's answers and report how many
                      children missed each question. It will also provide the teacher with study
                      guides to send home and a graph that represents the percentage of children
                      who mastered the standards designated for the lesson.
                5.   Follow-up activities –The students will be practicing using cards and
                      dominoes throughout the lesson. See Attached Handouts.

VI.   **HANDOUTS/WORKSHEETS**- Each lesson has an extra game attached.
        A.   Appendix A: Number Combinations (Lesson 1)

B.   Appendix A1: Number Combinations Recording Sheet and Number Mats
C.   Appendix B: Sum it Up
D.   Appendix B1: Sum it Up Recording Sheet
E.   Appendix C: Minus This, Minus That (Lesson 2)
F.   Appendix C1: Minus This, Minus That Recording Sheet
G.   Appendix D: Quick Calculating Extra Subtraction Game
H.   Appendix D1: Quick Calculating Recording Sheet
I.   Appendix E: Fun with Fact Families (Lesson 3)
J.   Appendix E1: Fun with Fact Families Recording Sheet
K.   Appendix F: Fast Fact Family Frenzy
L.   Appendix F1: Fast Fact Family Frenzy Recording Sheet
M.   Appendix G: Place That (Lesson 4)
N.   Appendix G1: Place That Work Mat
O.   Appendix G2: Place That Recording Sheet
P.   Appendix H: Finding My Place
Q.   Appendix H1: Finding My Place Work Mat
R.   Appendix H2: Finding My Place Recording Sheet
S.   Appendix I: More or Less (Lesson 5)
T.   Appendix I1: More or Less Recording Sheet
U.   Appendix J: More Please, Less Please
V.   Appendix J1: More Please, Less Please Recording Sheet
W.   Appendix K: How Many Ways (Lesson 6)
X.   Appendix K1: How Many Ways? Tally Sheet
Y.   Appendix K2: How Many Ways? Recording Sheet
Z.   Appendix L: Which color is next?
AA.   Appendix L1: Which color is next? Recording Sheet
BB.   Appendix L2: Which color is next? Graphing Mat

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Number Combinations

Skill: Recognizing Different Combinations For a
Number

Materials: Dominoes

Number Mats

Pencils

Recording Sheets

Teacher's Note: Remove any dominoes that have a
sum of 0, 1, 11, and 12

1. Have students work in pairs.
2. Each student takes one domino and names the
   number combination represented by the dots.
3. The student then places their domino in the star
   with the corresponding sum.
4. Students continue taking turns until all of the
   dominoes are sorted on the number mat.
5. Once the dominoes are sorted, each student
   writes an addition sentence on the recording
   sheet for each domino.
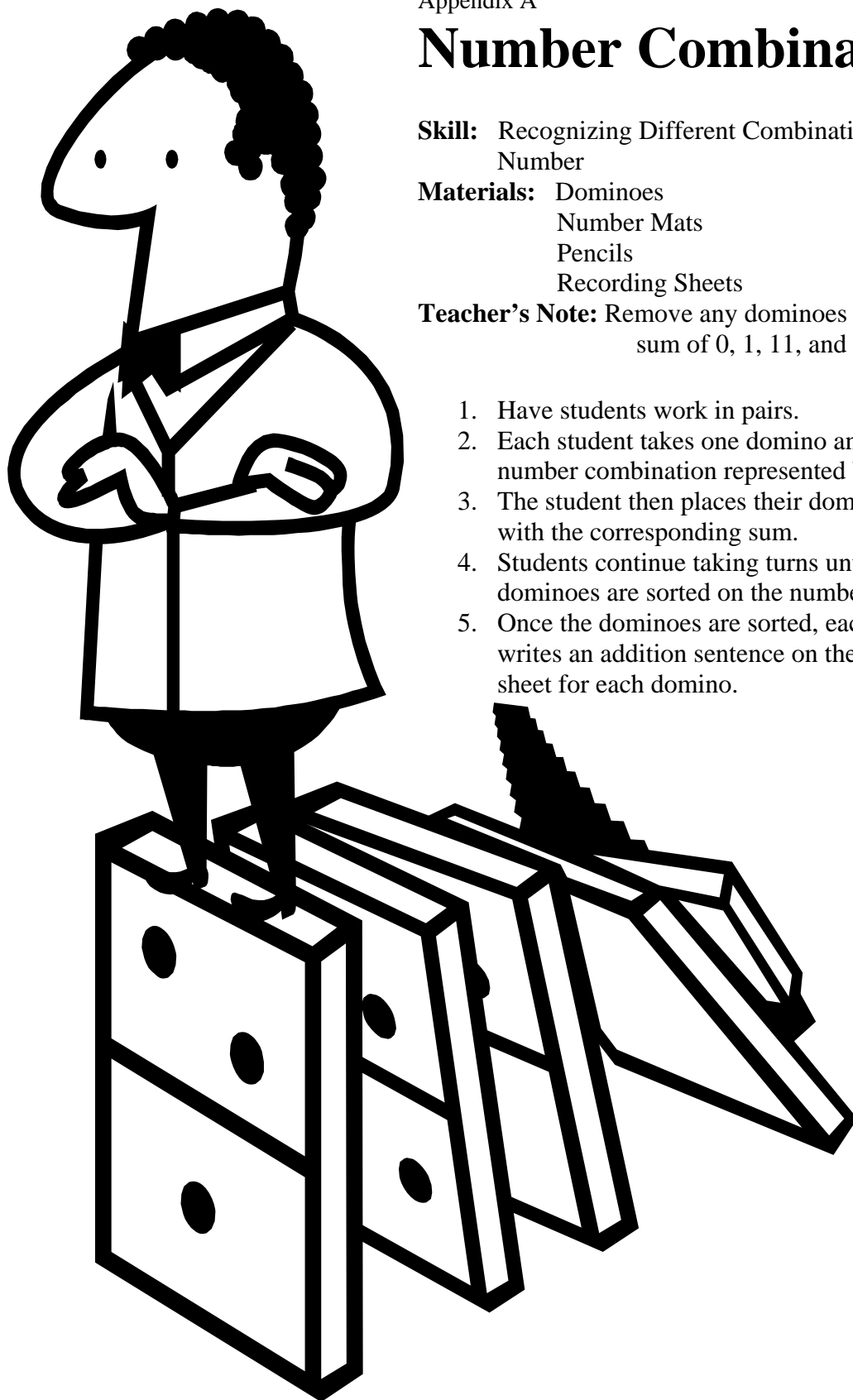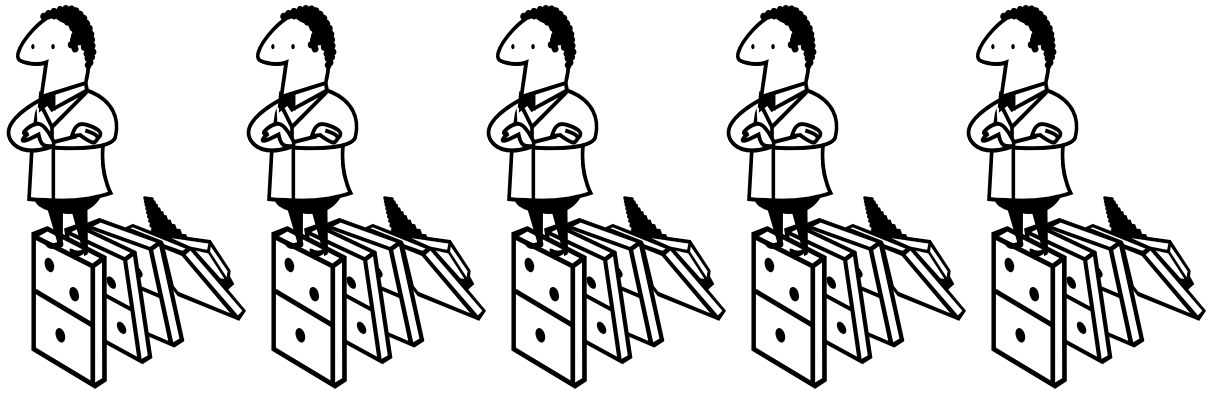
Number Combinations

Appendix A1

Number Combinations

Appendix A1

7

9

8

10
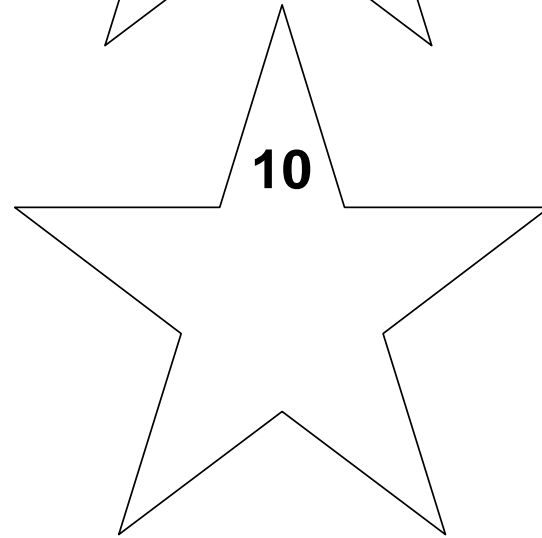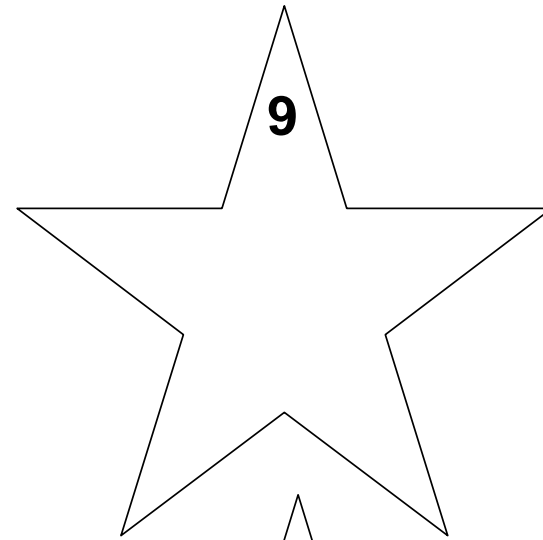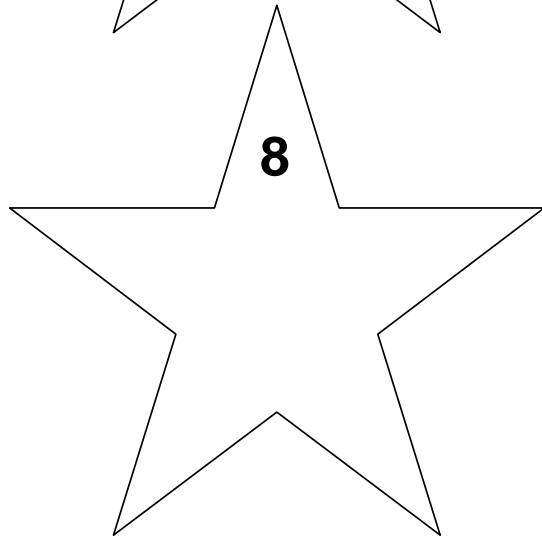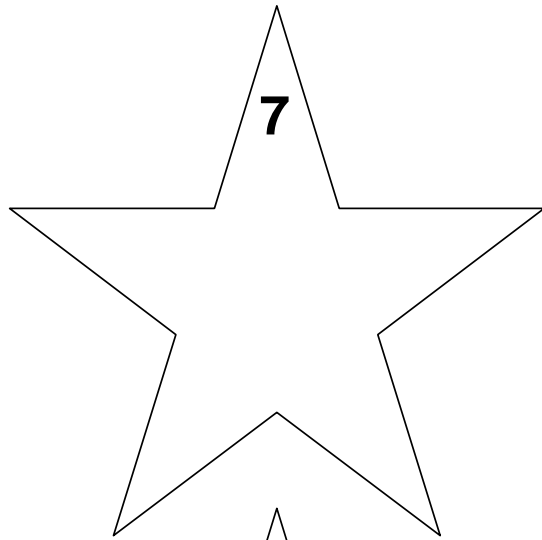
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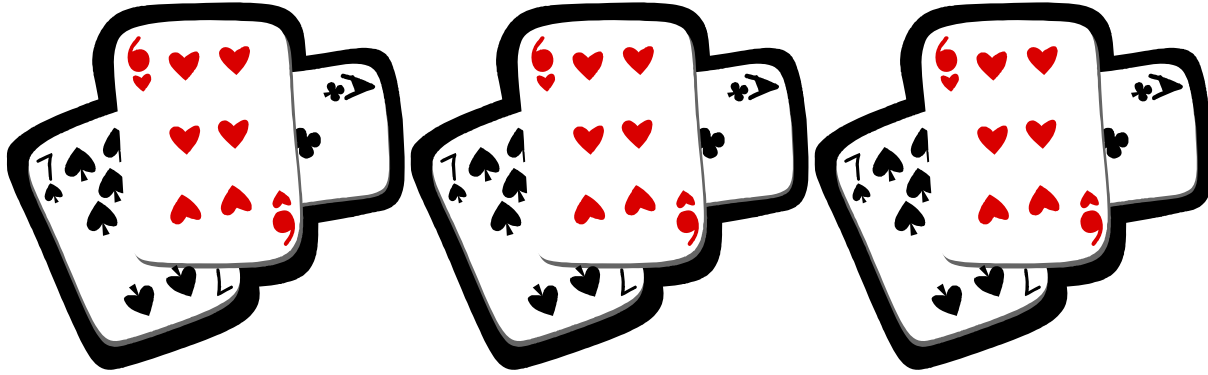
Sum It Up
Appendix B

Teachers: Remove all face cards and aces from the deck of cards.

Skill: Addition
Number of Players: 4
Materials: Deck of Playing Cards
            Calculators
            Pencils
            Recording Sheets

1. Place all the cards face down in the middle of the playing surface.
2. Each child draws two cards and lays them face up in front of them.
3. After each child draws their cards, they will add the two numbers on the cards together and record their results on their record sheet.
4. The children will each announce their sum to the group and the group will then check that student's answer with their calculator.
5. To complete the round, the remaining players repeat this process.
6. At the end of the round, students will determine who had the highest sum and the lowest sum.
7. Game continues for as many rounds as desired or until all cards have been used in the middle.
8. As students become more proficient, challenge them to select three, four, five, or six cards from the pile and add the numbers together.

SUM IT UP
Appendix B1

_____

___   ___   ___   ___   ___   ___   ___

_____

___   ___   ___   ___   ___   ___   ___

_____

___   ___   ___   ___   ___   ___   ___

_____

___   ___   ___   ___   ___   ___   ___

_____

___   ___   ___   ___   ___   ___   ___

_____

Minus This, Minus That

Skill: Subtraction
Number of Players: Partners
Materials: Deck of Cards (Remove Face
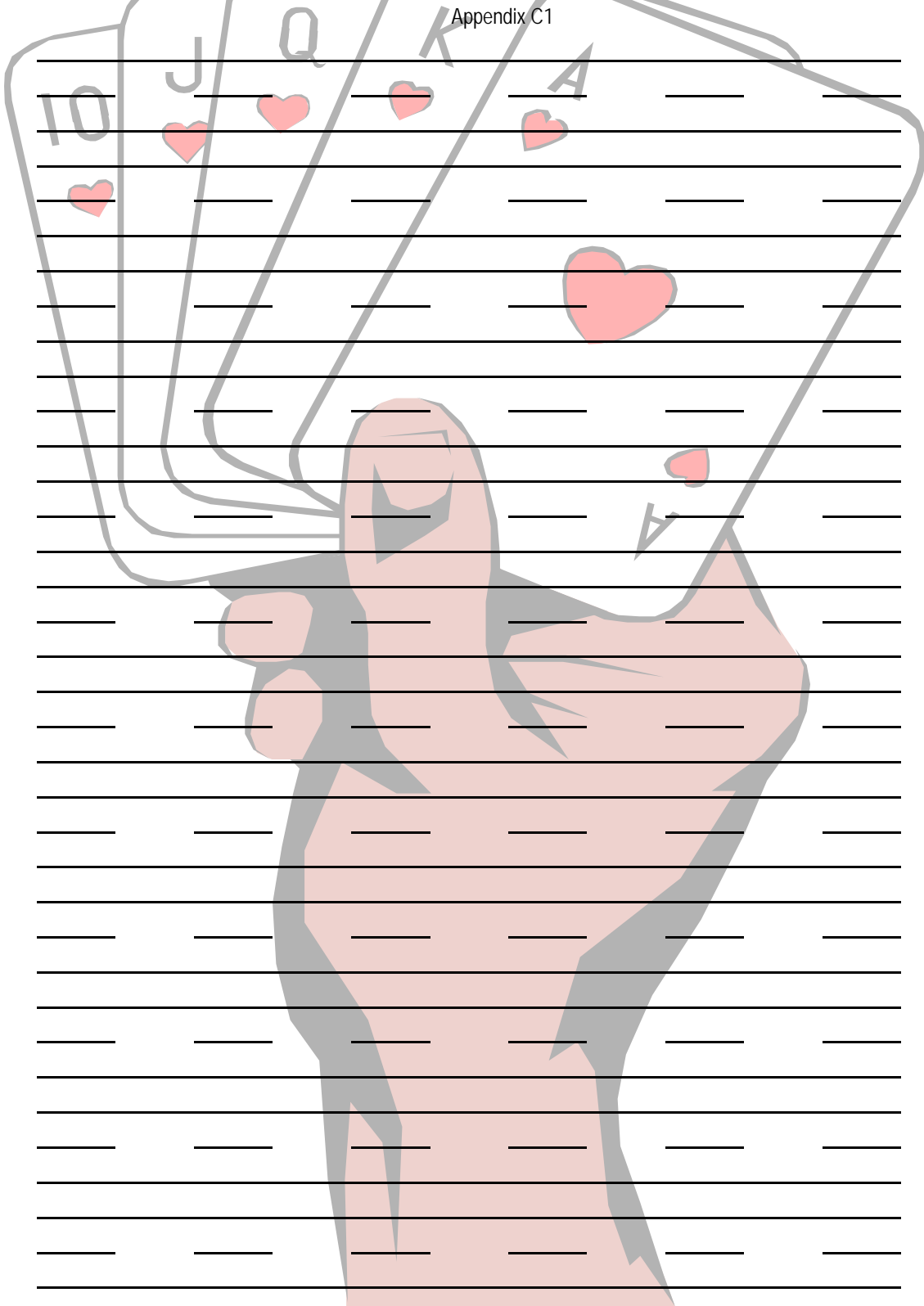   Cards)
        Counters
        Recording Sheets
        Pencils

1. Explain to students that they will use the card shuffling machine to shuffle the cards. They will then place the cards in an even stack of two.
2. One student will choose a card from each stack and ask themselves "Is my first card more or less than my second card?"
3. If the card is more the student will then ask themselves, how much more and write the problem down on paper. (For example if they pull a 10 and a 7, they will write 10-7=3) They can use counters to help them answer the problem.
4. The next partner will then have a chance to pull cards and complete a problem.
5. The game will continue until all the cards have been used.

Remember that Aces are understood to be the number one.
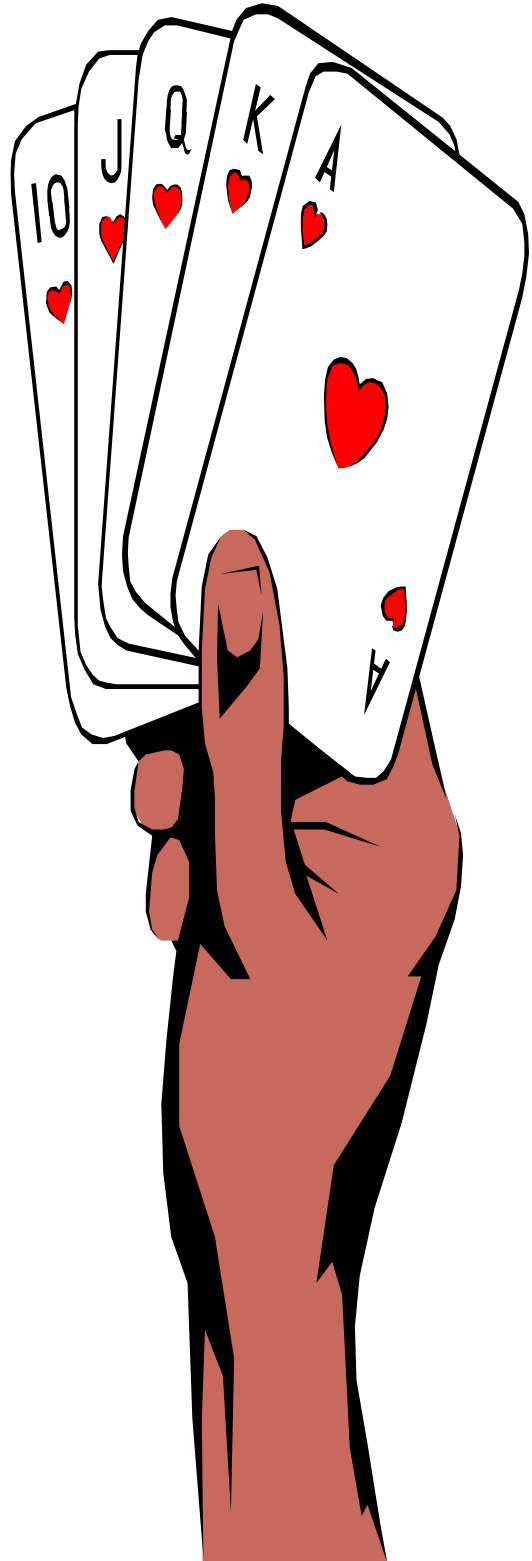
Minus This, Minus That

Appendix C1
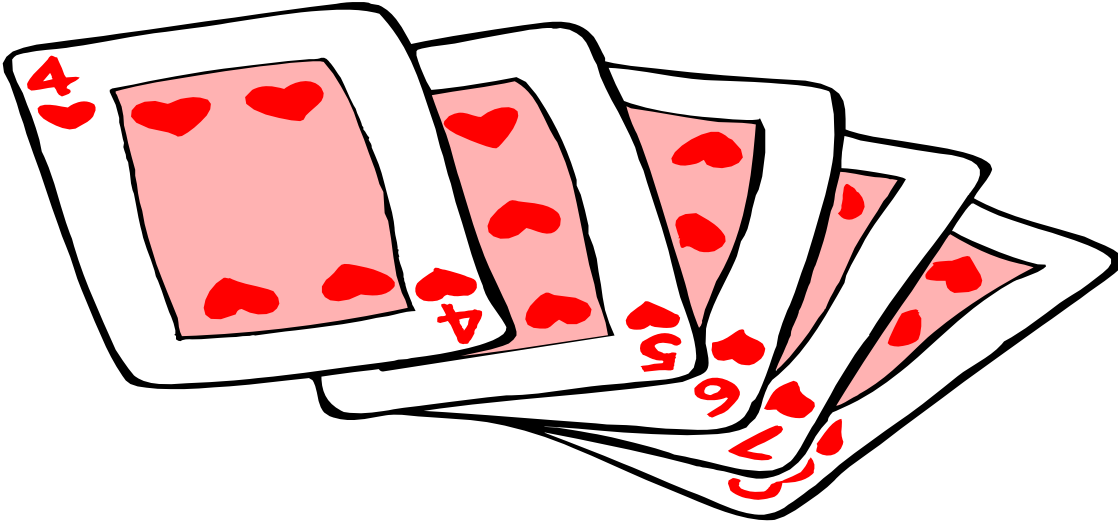
Quick Calculating

Appendix D

Skill: Subtracting from two digits
Number of Players: Independent or with a partner
Materials: Deck of cards (Remove the face cards and tens)
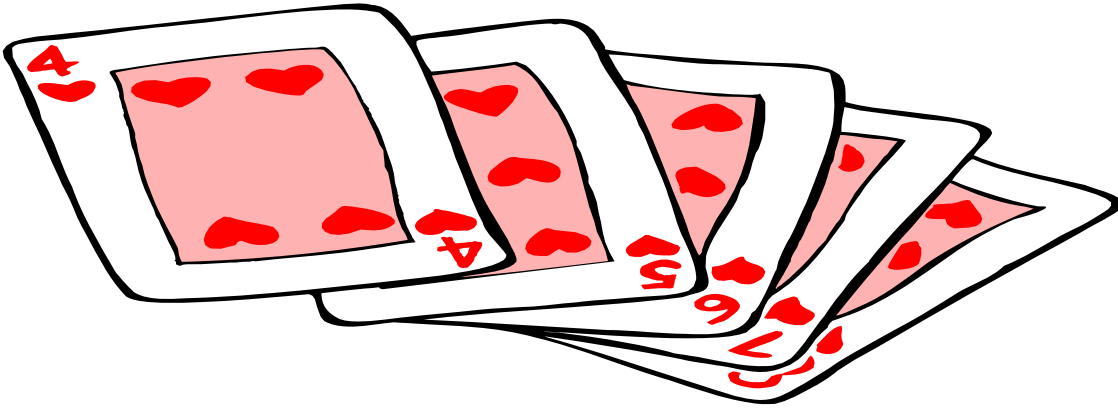   Die
                Calculators
                Pencils
                Recording Sheets

1. A student draws two cards. He/She uses the cards to make a two-digit number. (Aces are considered to have a value of one.)
2. The student writes the resulting number on the record sheet.
3. The student then rolls the die and subtracts the number shown on the die from the two-digit number.
4. The student uses the calculator to check his work.
5. The student repeats the activity a predetermined number of times.

Quick Calculating
Appendix D1

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____ _____

Fun with Fact Families

Skill: Practice with Fact Families (Adding &
Subtracting)

Number of Players: Independent or with a partner

Materials: Dominoes

    Pencils

    Recording Sheets

1. The student picks a domino and then they are to complete each box on the record sheet (A-H) by illustrating the domino in each box.

2. The next step is to write the two numbers from the domino down below as an addition fact and solve.

3. The student is to then list the three remaining number sentences in that fact family.

<u>**Example:**</u>
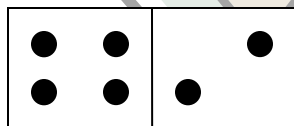
1. 4 + 2 = 6
2. 2 + 4 = 6
3. 4 – 2 = 2
4. 6 – 2 = 4

Fun with Fact Families   Appendix E1

Name _____

A

1. _____
2. _____
3. _____
4. _____

B

1. _____
2. _____
3. _____
4. _____

C

1. _____
2. _____
3. _____
4. _____

D

1. _____
2. _____
3. _____
4. _____

Fun with Fact Families   **Appendix E1**   Name _____

E

1. _____
2. _____
3. _____
4. _____

F

1. _____
2. _____
3. _____
4. _____

G

1. _____
2. _____
3. _____
4. _____

H

1. _____
2. _____
3. _____
4. _____

Fast Fact Family Frenzy

Appendix F

Skill: Fact Families (Adding & Subtracting)
Number of Players: Groups of 4
Materials: Bucket of Dominoes
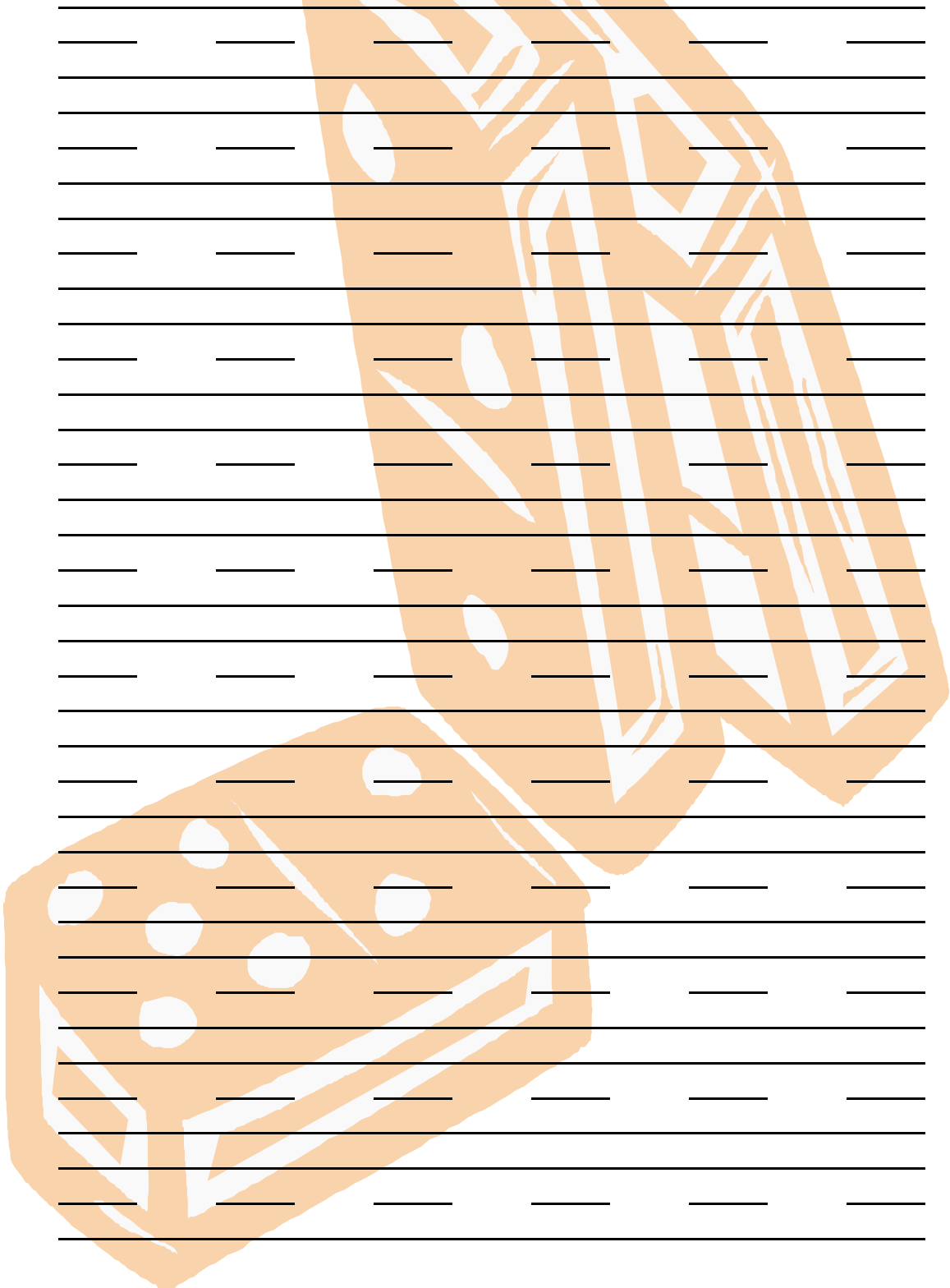   Recording Sheet
          Pencils
          Laptops (optional)

1. Give each group of four, bag of dominoes, 1 record sheet and 1 pencil.
2. One person chooses a domino, writes down an addition fact that goes with the domino and passes the record sheet to the right.
3. The next person writes another addition fact and passes it on. And so on, for two subtraction facts. (We try it together first.)
4. Each time the group successfully completes their fact families they get another domino and start over. (For doubles, the kids love being smart enough to know there were only two facts in the family.)
5. *Optional:* Instead of using pencil and paper place one laptop for each group to type in their fact families and print when finished.
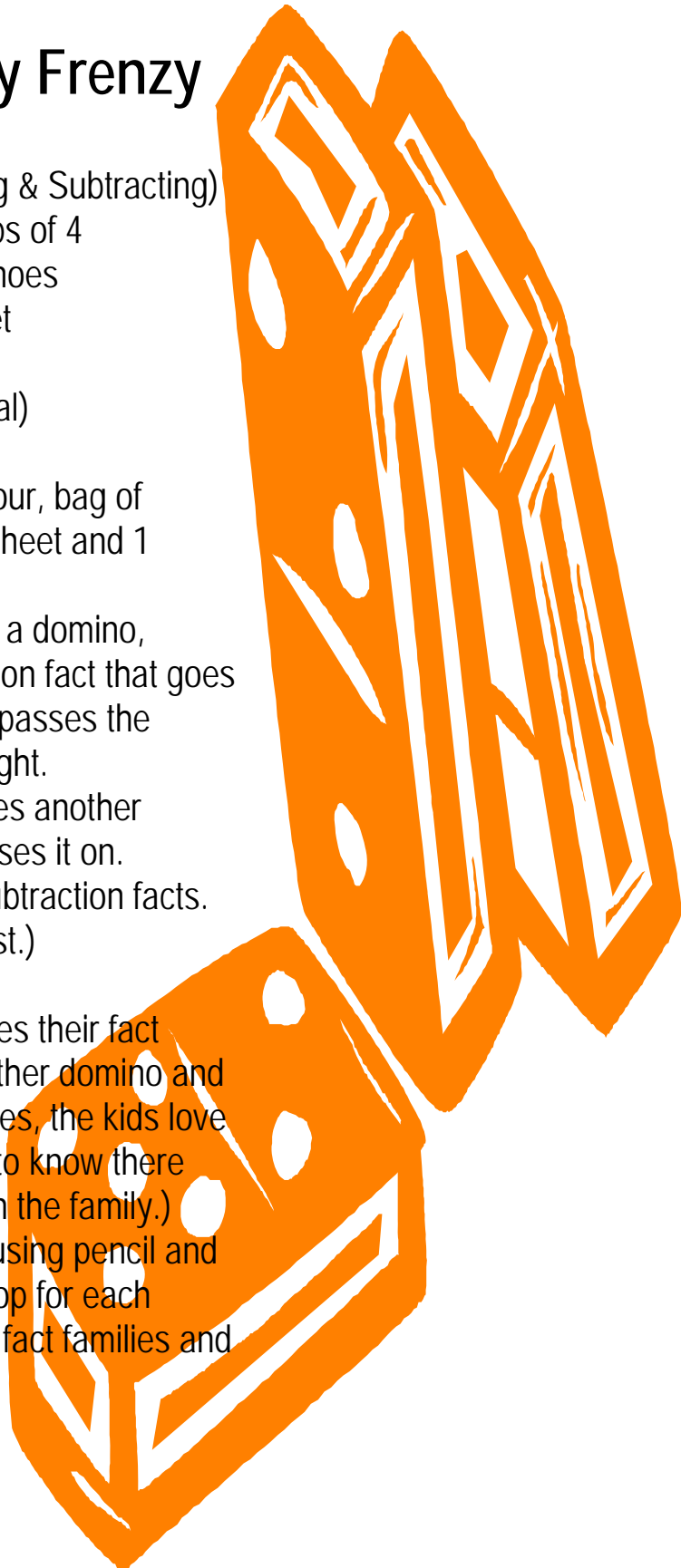
Fast Fact Family Frenzy

Appendix F1

Place That

Appendix G

Skill: Place Value, Reading and Writing
     Numbers, Counting
Number of Players: Pairs
Materials: Place Value Mats
               Base Ten Blocks
               Two Dice
               Pencils
               Recording Sheets

1. Each student will roll two dice.
2. The student will then write down what number they rolled on their record sheet. (For example: If a student rolls a 6 and 5, then the number they write is 65.)
3. The student will then use their base ten blocks to show that number on the place value mat. (How many tens do I need? 6) (How many ones do I need? 5)
4. The student will then draw the base ten blocks they used on the record sheet.
5. Once the blocks have been drawn, the student will then write the number as a word.
6. The game continues until the student has drawn five different problems each.

Tens

Ones

Draw base ten blocks used.	Write the number you rolled.	Write the word for the number you rolled.

Finding My Place

Skill: Place Value, Reading and Writing Numbers,
  Counting

Number of Players: Pairs

Materials: Place Value Mats
        Base Ten Blocks
        Bag of Dominoes
        Pencils
        Recording Sheets

1. Each student will pick one domino.
2. The student will then write down what number they picked on their record sheet. (For example: If a student picks a 6 and 5, then the number they write is 65.)
3. The student will then use their base ten blocks to show that number on the place value mat. (How many tens do I need? 6) (How many ones do I need? 5)
4. The student will then draw the base ten blocks they used on the record sheet.
5. Once the blocks have been drawn, the student will then write the number as a word.
6. The game continues until the student has drawn five different problems each.

Tens

Ones

Draw base ten blocks used. Appendix H2	Write the number from your domino.	Write the word for the number on your domino.

More or Less

Skill: More or less (Reviews + and -)
Number of Players: 2
Materials: 2 Decks of Cards (No Face Cards)
               Coin
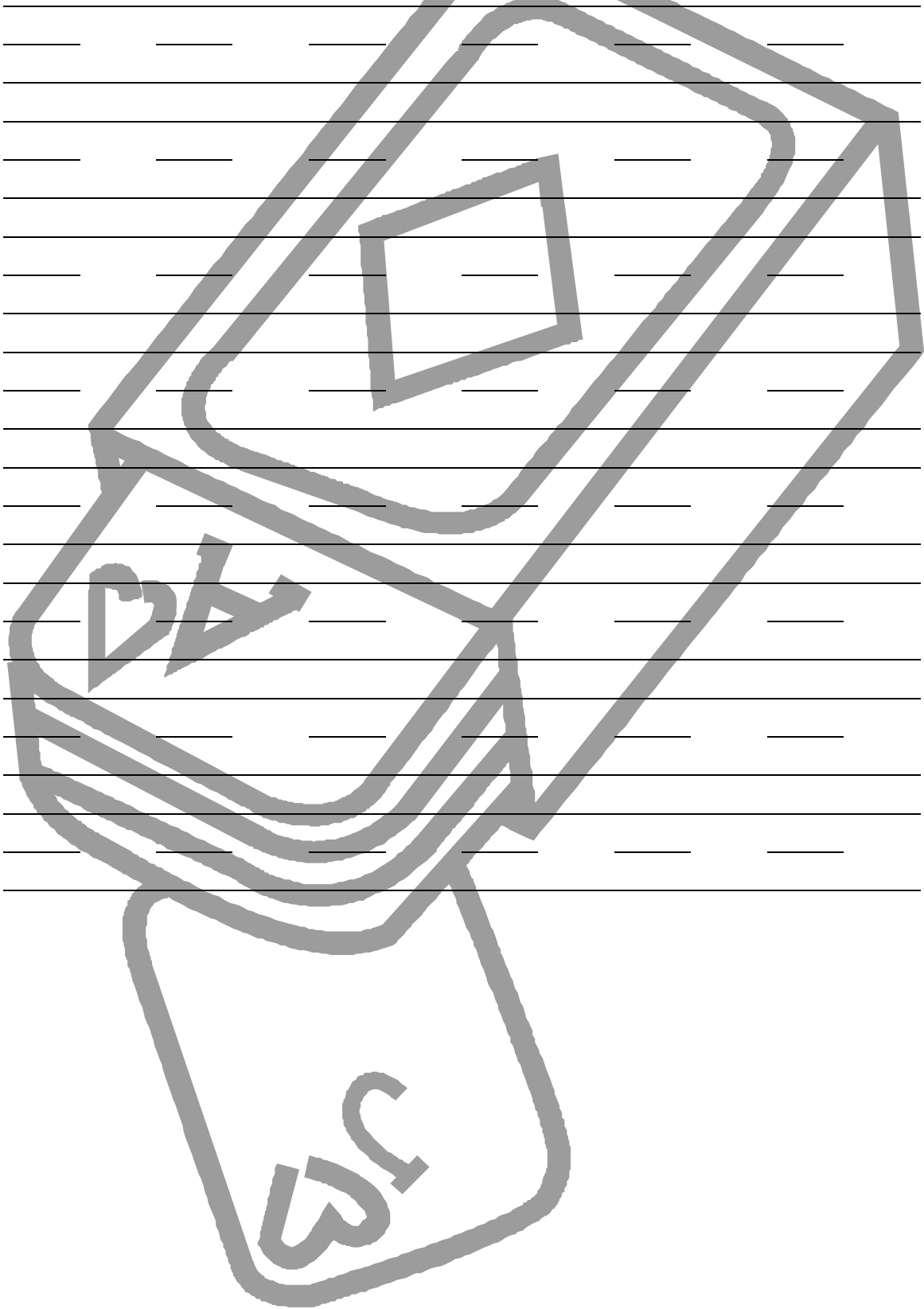   Recording Sheets
               Pencils

1. The players will flip a coin to tell if the winner of the game will be the person with "more" (a greater value card) or "less" (a smaller value card).
2. Remove all face cards (jacks, queens, and kings) and divide the remaining cards in the stack between the two players.
3. Place the cards face down. Each player turns over one card and compares: Is mine more or less? How many more? How many less?
4. Each player will write down their addition and subtraction facts as they pull new cards.

For example:
Player 1 draws a 2 and Player 2 draws a 4. Player 2 states that their card is more than Player 1's. Both players will write down 4-2=2 and 2+2=4.

More or Less

More Please, Less Please

Appendix J

Skill: More or Less Than (Review of + and -)
Number of Players: 2
Materials: Two Dice
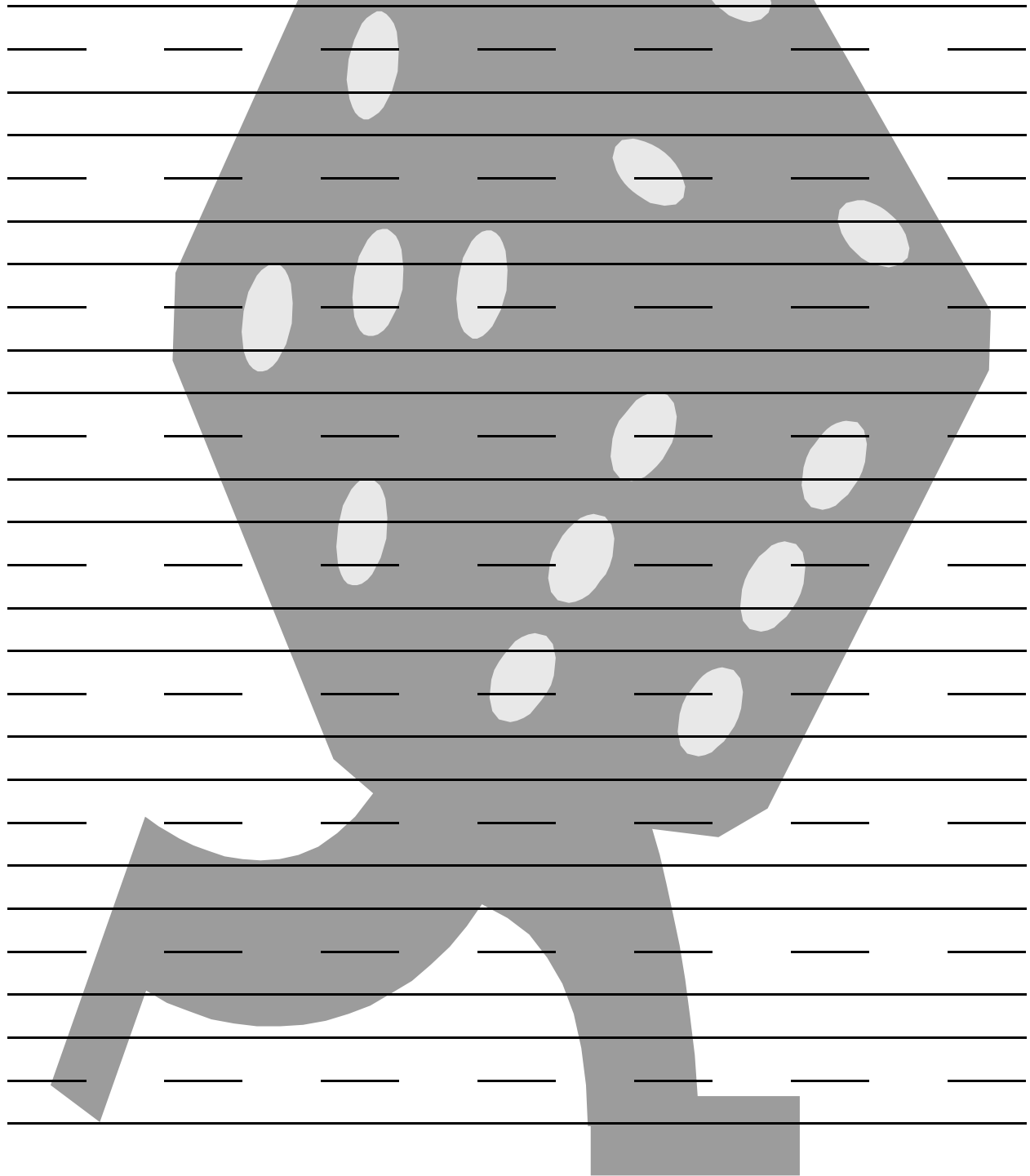Recording Sheets
Pencils

1. The players will flip a coin to tell if the winner of the game will be the person with "<u>more</u>" (a greater value card) or "<u>less</u>" (a smaller value card).
2. Each player rolls one die and compares: Is mine more or less? How many more? How many less?
3. Each player will write down their addition and subtraction facts as they roll new numbers.
4. As the students get better at this allow them to roll two dice each and work with larger numbers.
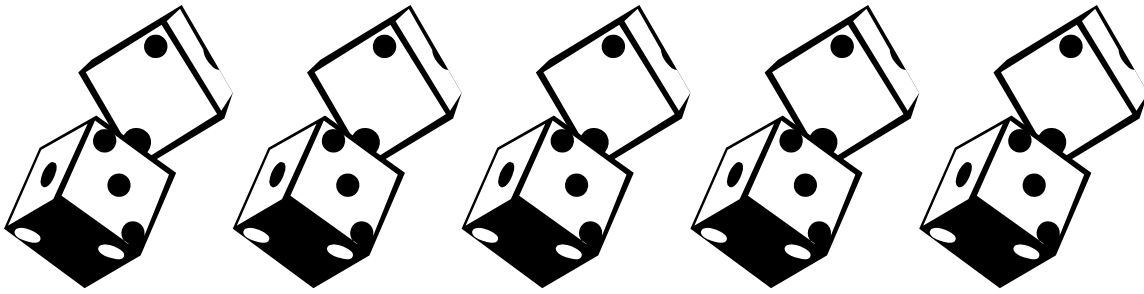
For example:
Player 1 rolls a 2 and Player 2 rolls a 4. Player 2 states that their die is more than Player 1's. Both players will write down 4-2=2 and 2+2=4.

More Please, Less Please

Appendix J1

How Many Ways?

Appendix K

Skill: Probability
Number of Players: 2-4
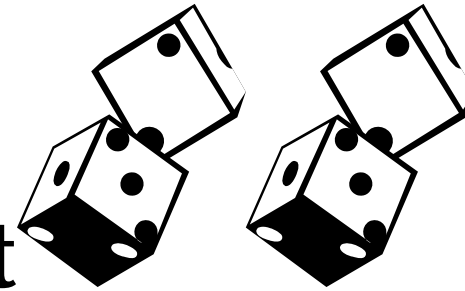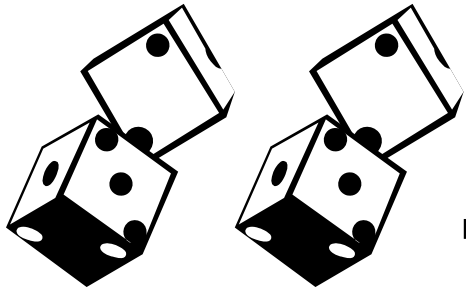**Materials:** Die
               Tally Sheets (1 per group)
               Pencils
               Recording Sheets

1. The object of the game is to find the probability of rolling numbers one through six.
2. Each player will roll the die and record a tally mark in the chart for the corresponding number rolled. (One tally sheet per group.) The players will continue to do this until they have rolled the die a total of 25 times.
3. Now the tally chart should be filled with the player's results. The next step is to use the tally sheet to answer the questions on the record sheet. Each student will need to fill out a record sheet.
4. The record sheet asks the probability for rolling the numbers one through six. The student is to count up how many times they rolled each number and write their answer in the appropriate blank.

Tally Chart

Place a tally mark under each number you roll. Roll the dice 25 times.

1	2	3	4	5	6

How Many Ways?

Appendix K2

Which color is next?

Skill: Probability

Number of Players: 4

Materials: Colored Dice (Place different colored circles on each side of the dice.)

Colored Cubes (The colors of the cubes should match the colors on the dice.)
(Linking Cubes or Unifix Cubes work best.)

Graphing Mat (Laminated)

Recording Sheet

Pencils

Colored Pencils

1. Give each group a die and a pile of cubes. Taking turns, roll the die and look at the color on top.
2. Find a cube of the same color and place it on the graphing chart.
3. Each student in the group takes turns rolling the die and selecting a matching cube. Encourage them to discuss what is going on. What color do they think will turn up next? Why?
4. After each student rolls 3 times each they will discuss their graph results.
5. They will use the record sheet to color in their graph to match their large graph they created as a group.

Recording Sheet: Which color is next?

RED	BLUE	GREEN	YELLOW

Graphing Mat

RED	BLUE	GREEN	YELLOW