Summer Math Review Packet

Entering 3rd Grade

Name:_____

Schools of the Sacred Heart San Francisco
Summer Math Review Packet

Keeping math skills sharp: Summer should be a time for fun, relaxation and family time. However, intentional practice of math skills has been shown to be helpful for student retention of topics learned during the school year. This packet is designed to review some essential skills/concepts and to ensure a smooth transition back to school. ***Students DO NOT need to complete the full packet.***

Student Accountability: Students are expected to complete **20 one-sided pages (but ideally more).** Our goal is for students to spend **30 minutes a week** over the summer engaging with mathematics. At the end of some packets, there is an optional challenge section. Your child may choose to replace pages covering basic facts with the challenge options if he/she has truly mastered the skipped content. Please have your child return their packet to their new homeroom teacher at the beginning of the school year.

What parents can do to support their child:

- Make a practice plan and help your child set goals in order to complete the required work by the start of the school year. Your child's packet may have more pages than needed so feel free to choose! Spacing the practice throughout the summer will be more effective in terms of keeping skill sets in place.

- Establish a place where your child can work without distractions and encourage independence when appropriate.

If you are interested in additional enrichment, games, etc. for your child this summer, take a look at the ideas below:

Math Board Games, Apps, Books and Summer Camps

Qwirkle
Big Brain Academy
Bendomino
Mastermind
Flip 4
Make 7
Rush Hour
Equate
MadMath
Ken-Ken/Sudoku/Inkies
Double Shutter
YamSlam
Pentago
Bump (The Sneaky Number Game)
Blokus
Set/Set Cubed
Chocolate Fix
Q Bitz
Chess
Ticket To Ride
Battleship
Puzzles!!
Prime Climb
SMATH (like Scrabble but with equations)
Dominoes
Catan
Catan Jr.
PayDay
Monopoly
Exact Change
Sorry
Legos
Connect Four
Uno
Fishing for 10
Spot it
Chutes and Ladders
Guess Who

Math Websites

Math Stories -- www.mathstories.com
NRICH -- https://nrich.maths.org/9086
A Plus Math -- www.aplusmath.com
Math Playground -- www.mathplayground.com
Fun Brain -- www.funbrain.com
AAA Math -- www.aaamath.com

Cool Math -- www.coolmath4kids.com
Mensa --- www.mensaforkids.com
Fun --- www.fun4thebrain.com
Cyber Games - http://pbskids.org/cyberchase
Youcubed - http://youcubed.org
Beast Academy - https://beastacademy.com/books

Bridges Program Family Math Games -
https://sites.google.com/mathlearningcenter.org/math-at-home/family-games

IXL (Students have used this app in class to practice various skills and have their own personalized log in.)

DragonBox - https://dragonbox.com/

Links to math workbooks (some to purchase) and websites

https://www.amazon.com/Challenging-Problems-Grade-Primary-Mathematics/dp/9812855335/ref=sr_1_3?dchild=1&keywords=challenging+word+problems+grade+5&qid=1619836744&s=books&sr=1-3
(Link is to the fifth grade book but this publisher has books for grades 1-6)

https://www.aimsedu.org/current-projects/puzzle-corner/ (AIMS has very high-quality books/activities)

http://www.kenkenpuzzle.com/store/books (kids love Ken Ken puzzles and you can purchase books or play for free online)

https://nrich.maths.org/primary (Educator website with incredible activities that parents can use too)

http://teacher.scholastic.com/maven/index.htm (math mysteries to solve - lots of reading involved)

https://www.youcubed.org/ (incredible math programming from Youcubed at Stanford)

https://beastacademy.com/books (enrichment math)

http://www.puzzlechoice.com/pc/Number_Puzzlex.html

https://mathpickle.com/puzzles-and-games/

https://edshelf.com/tool/connect-sums/

https://www.commonsensemedia.org/lists/best-math-games-and-apps-for-kids

36 Math Apps For Elementary School Students - (math apps for ipads)

https://www.brookline.k12.ma.us/site/Default.aspx?PageID=2222

https://www.prufrock.com/At-Home-Student-Activities.aspx (this just in from Prufrock Press - great publisher for challenging activities) (FREE)

https://www.noetic-learning.com/pow.jsp (problem of the week)

https://wideopenschool.org/?j=7723549&sfmc_sub=170772299&l=2048712_HTML&u=144169164&mid=6409703&jb=1089&utm_source=WOS_announcement_20200331&utm_medium=email

Math < PreK-5 < Educator

https://www.eaieducation.com/category/599_1/The_STEM_Den.aspx?utm_source=EAI+Education+Newsletter&utm_campaign=84ec9a92dc-EMAIL_CAMPAIGN_2020_04_21_09_01&utm_medium=email&utm_term=0_2057022af5-84ec9a92dc-54362033&mc_cid=84ec9a92dc&mc_eid=9198f11156 STEM Projects

Math at Home - Family Games

https://www.mindware.orientaltrading.com/web/search/searchMain?keyword=books+math

https://mashupmath.com/shop/101c (algebra puzzles - favorite)

https://mathathome.mathlearningcenter.org/activities-of-the-day Bridges Math - games, daily activities, practice pages from Bridges workbook

https://www.amazon.com/s?k=summer+bridge+activities+4-5&crid=560BMDVOTYO1&sprefix=summer+bridge%2Caps%2C264&ref=nb_sb_ss_i_5_13

https://www.amazon.com/Summer-Blast-Getting-Ready-Fifth/dp/1425815553/ref=sr_1_3?dchild=1&keywords=summer+blast&qid=1591643536&sr=8-3

https://virtual.aopsacademy.org/?utm_source=nagc&utm_medium=email&utm_campaign=Virtual_Academy_Summer_Camps (virtual math/language arts camps)

Summer Math/Enrichment Camps (check if virtual or in-person)

https://www.sacredsf.org/the-experience/summer-program

https://atdp.berkeley.edu/

https://www.nuevaschool.org/enrichment/nueva-summer

https://spcs.stanford.edu/programs

https://astrocampsummer.org/

http://www.tinkeringschool.com/day-camp

https://epsiloncamp.org/

https://www.sfmathcircle.org/

https://artofproblemsolving.com/wiki/index.php/Mathematics_summer_program

https://cty.jhu.edu/summer/grades2-6/

Math Games

Math games are a great way for your daughter to engage with the concepts in a fun way. The following math games reinforce the math concepts that have been taught this year.

Partners to Tens: To play this game you will need a deck of cards with the Jacks, Kings & Jokers removed from the deck. The Aces will stand for 1 and the Queens will stand for 0. The objective of the game is to collect partners to ten. Each player is dealt 7 cards, the remaining cards will be the drawing cards, or "fishing cards". Players ask each other for cards that will help them complete a partner to ten. For example, if I have a 2 in my hand I would ask if my opponent has a 8. If he/she does then they would give it to me, if not I would draw a card from the "fishing cards". The game continues until there are no cards remaining.

Forehead Facts: To play this game you will need a deck of cards and three players with all of the face cards (Jacks, Queens, Kings, & Jokers) removed from the deck. One player will be the dealer and the other two players will be the forehead card holders. The dealer will then give each player one card. Without looking at the card, the player places the card on their forehead with the number facing out. The dealer looks at both of the cards and finds the sum of the two cards. Using the sum and the other players' card, each player tries to figure out the card that is on their head. The roles change after each round.

Addition (Two Card Draw!) To play this game you will need a deck of cards. Remove all of the face cards (Jacks, Queens, Kings, & Jokers). Shuffle the cards and deal out the entire deck. Players keep cards face down and count 1,2,3 and flip two cards over at the same time. Players add together the numbers on their cards to find the sum. The player whose sum is larger, takes the cards for that round. If there is a tie, players each put 3 cards down and turn over 2 more to find the new sum. The winner of the tie takes all of the cards for that round. The game continues until one player has all of the cards.

***Challenge: Three Card Draw!**

Use the same card deck as you would for Two Card Draw!

Strategies for adding three cards:

- First, add two cards for a total. Then add the remaining card to find the total sum.
- Look for partners to ten. If you have partners to 10, then just add the third card to 10.

Rolling for $1.00 or $2.00: To play this game you will need a die and a bag of coins (pennies, nickels, dimes & quarters). To begin, all of the coins will be the bank and as you roll the die you take that amount of money out of the bank. For example, if I roll a 5 I will take out $0.05. As the game continues, players are to make trades or exchanges for fewer coins. For example, if I have 10 pennies I could trade for 1 dime. The goal is to use the fewest coins to show an amount of money. The game continues until $1.00 or $2.00 is made.

Summer Math Resource Packet

Go Fish: Kindergarten

To play this game, remove all face cards from a deck. Each player is dealt 7 cards, the remaining cards will be the drawing cards, or "fishing cards". Players ask each other for cards that will help them complete pair. For example, if I have a 3, I would ask my opponent for a 3. If he/she has the card, the card would be handed to me to complete a double. If not, I would draw a card from the "fishing cards". The game continues until there are no cards remaining.

Fishing for Tens: 1st grade

To play this game you will need a deck of cards with the Jacks, Kings & Jokers removed from the deck. The Aces will stand for 1 and the Queens will stand for 0. The objective of the game is to collect partners to ten. Each player is dealt 7 cards, the remaining cards will be the drawing cards, or "fishing cards". Players ask each other for cards that will help them complete a partner to ten. For example, if I have a 2 in my hand I would ask if my opponent has a 8. If he/she does then they would give it to me, if not I would draw a card from the "fishing cards". The game continues until there are no cards remaining.

Forehead Facts: 1st, 2nd, 3rd, 4th grades

To play this game you will need a deck of cards and three players with all of the face cards (Jacks, Queens, Kings, & Jokers) removed from the deck. One player will be the dealer and the other two players will be the forehead card holders. The dealer will then give each player one card. Without looking at the card, the player places the card on their forehead with the number facing out. The dealer looks at both of the cards and finds the sum of the two cards. Using the sum and the other players' card, each player tries to figure out the card that is on their head. The roles change after each round.

Variations: Play by finding the difference between the two cards, and the players have to determine the subtrahend and minuend. Play by finding the product of the two cards, and the players have to determine the factors.

Addition War: 1st, 2nd, 3rd, 4th grades
To play this game you will need a deck of cards. Remove all of the face cards (Jacks, Queens, Kings, & Jokers). Shuffle the cards and deal out the entire deck. Players keep cards face down and count 1,2,3 and flip two cards over at the same time. Players add together the numbers on their cards to find the sum. The player whose sum is larger, takes the cards for that round. If there is a tie, players each put 3 cards down and turn over 2 more to find the new sum. The winner of the tie takes all of the cards for that round. The game continues until one player has all of the cards.
Variation: Subtraction War and Multiplication War (2nd, 3rd, 4th)

Rolling for $1.00 or $2.00: 1st, 2nd, 3rd, 4th
To play this game you will need a die and a bag of coins (pennies, nickels, dimes & quarters). To begin, all of the coins will be the bank and as you roll the die you take that amount of money out of the bank. For example, if I roll a 5 I will take out $0.05. As the game continues, players are to make trades or exchanges for fewer coins. For example, if I have 10 pennies I could trade for 1 dime. The goal is to use the fewest coins to show an amount of money. The game continues until $1.00 or $2.00 is made.

Top It: Kindergarten, 1st grades
To play this game you may use Top It cards, domino cards or a deck of cards (with all face cards removed). All of the cards are dealt out face down among the two players. The players then say "1,2,3 Top It" and each turn over a card. The player with the higher card wins the round and takes the cards. If you are playing with dominoes add up the total amount of dots and the player with the highest sum wins the round. The game continues until one player has all of the cards.
Variation Top-it (place value) 1st, 2nd, 3rd, 4th grades
Students play the same as above except each player turns over 2-6 of their cards. They then create the largest (or smallest) number that they can using the digits they turned over. The winner takes all of the cards and adds them to their pile.

Time Match: 1st, 2nd grades
Use analog clock and digital clock times cards provided by teachers to play Memory, or simply match up the cards.

Make a Number (place value) 2nd, 3rd, 4th grades
Each player draws 4-6 short horizontal lines on a piece of paper. Each of the horizontal lines represents a place value. The line on the right represents the ones place, the one next to it represents the tens place, etc.
Player 1 then rolls the die and writes the number on one of their lines. Player 2 then rolls and chooses where to write their number. Players continue to take turns until all the spaces are filled.
The goal is to create the largest number possible and depending on the number that is rolled, the player decides which space to write the number.
The player with the highest number is the winner.

Quick Stop Card Game (addition or subtraction regrouping, place value) 2nd, 3rd, 4th grades
For addition, start by turning over one card and writing the number down on a piece of paper
Proceed to flip over cards and add up their values on the paper

Keep playing until someone gets to 100 (or you can pick a higher number!)
For subtraction, you do the same thing except start with a number such as 99 (or higher) and subtract the numbers on the cards until someone gets down to zero
You can also play this by rolling a die to produce a number rather than flipping over cards.

Pico Fermi Bagel (place value) 2nd, 3rd, 4th grades
One player thinks of a three or four-digit number (or higher) and writes it on a separate piece of paper. To set up the game, this player also writes one line to stand for each place in the chosen number and writes the numbers zero through nine consecutively on the board (to cross off as guessed). The other player then guesses a number. The first player goes through each digit and tells them whether it was accurate using the following words:
Pico indicates that the digit in the guessed number is correct but is in the wrong place.
Fermi signifies that a digit is correct and in the right position.
Bagel means that the digit is not in the number at all. For example, if the number is 284 and the guess is 698, the player would say "bagel, bagel, pico."
The other player can then strategize that the number has an 8 but not in the ones place. If the next guess is 182, the player will say "bagel, fermi, pico." The play continues until the number is guessed correctly.
Board set-up before play:
0 1 2 3 4 5 6 7 8 9
____ ____, ____ ____ ____

I'm the Greatest Card Game (addition, place value, regrouping) 2nd, 3rd, 4th grades
Shuffle a deck of cards (with the face cards and 10's removed)
Deal each player 6 cards
Each player uses their cards to create two 3-digit numbers that when added together will produce the largest sum possible
The players each add up the 3-digit numbers they have created, to find the sum
The player with the largest sum wins the round and gets a point.
The first player with 5 points wins the game
Example: A player gets the cards 5, 3, 7, 2, 5, and 6. They might want to create the numbers such as 755 and 632 to add for a sum of 1,387. They would compare this sum with other sums of the other players to see whose was the largest.

Double Down (doubles) 1st, 2nd grades
What they'll practice: Adding doubles
What they'll need: Two dice, one piece of paper, and one pencil per student
How to play: In pairs, time students so that each round of play lasts five minutes. When you say, "Roll 'em!" everyone rolls their two dice simultaneously. Anytime someone rolls doubles, they say, "Double Down!" Both students in that pair should stop rolling, then add the value of the dice, and record the sum under the player's name who rolled it. As play continues, students keep track of both sets of scores. Whoever has the most points at the end of five minutes wins.

Addition Facts

Doubles When you add a number to itself. These answers are always even.

3 + 3 = 6 6+ 6 = 12 5+5=10 12 +12 = 24

Neighbors - Also known as doubles plus 1. When 2 numbers being added are right next to each other, we call them neighbors. For example 5 +6 or 7 + 8. When you know your doubles, you can use that information to find the answer to the neighbors. When a students is stuck on 7 +8 , ask them to find the double fact that is "hiding in there". This often helps them use their reasoning skills to find answers to facts they don't know.

3+4 = 7 because 3 +3 = 6 so the sum of 3 and 4 is 1 more.

Make 10 facts - These are the facts that add to 10. These pairs of numbers make 10 and help students think in groups of ten .

8+2 = 10 9 +1 = 10 4+6=10 7+3=10

These facts help students think about adding larger numbers like 20 +80 =100 or 70 +30 =100

Fast Tens

It's fast to add 10 any single digit number. You always get a teen number!

10+3 = 13 8 +10 = 18

Counting On Facts

You can count on quickly when you add just 1, 2, or 3 to a number. Start with the larger number and count up.

6+2 = 8 8 =3 =11 Start with 8 and count 9,10,11

Fast Nines

When you know how to add 10, adding 9 to any number is a snap. If the fact is 9 +4, you can think about adding 10 (9+1=10) and then add 3 more to get 14. Some students prefer to think about adding 10 (rather than 9) and then taking 1 away from final answer.

9+8 = (10 +8 -1) = 17 This works for larger numbers as well - 36 +9 = 36+10 -1 =45

Subtraction Facts

The Take-away Model

One way to think about subtraction is to think about taking one group from another. For example, if you were solving 12- 5 you would think about removing 5 from 12. This, however, is not an easy task for young children. They need to operate on numbers they can handle. 12 – 5 can become easier if the child thinks about 12 – 2 = 10 and then 10-3 =7. In other words – they break up the 5 into smaller chunks that makes the answer accessible.

14 – 5 = 14-4-1=9 26- 8 = 26-6-2=18

When a child is stuck staring at 13 – 6 , a prompt would be " How about if we start with 13-3? Does that help?" This process helps kids understand that numbers can be pulled apart and put back together again - there is flexibility in dealing with numbers.

The Adding Up or Difference Model

Another way to think about subtraction is to think about what you need to add to the smaller number to get to the larger number. For example :

14 - 11 What do I need to add to 11 to get to 14? Or can I count up from 11 to get to 14 quickly?

Run Away Ones

When you take all the ones away from a teen number, all you have left is 10.
14-4=10 17-7 =10 19 -9 =0

Take Away Tens

Take away tens are fast facts. You just take a 10 and leave the ones alone.
17-10 =7 36 -10 =26 15-10=5 19-10 =9

Counting Back

You can count back when subtracting 1,2,or 3.
27-2=25 14-3 =11 16-2 =14

Up to Ten

Using the landmark number of 10 or any multiple is a powerful tool for students. With this strategy – the student adds to 10 and then adds up to largest number. For example: 13 -8 The student adds 2 to the 8 to get to 10 and then add 3 more to get to 13. The answer is 5 because you have added a total of 5 to 8 to get to 13.

Subtracting Nines

Students are generally better at subtracting 10 so when faced with subtracting 9, they should use what they know – subtract 10! But, then since they took 1 too many away, they need to add that 1 back on.

For example : 17 – 9 = 8 because 17-10 =7 "I took one too many away so I add it back on and get 8 for my final answer.

Half Facts

When the smaller number being subtracted is half the larger number, it's a half fact! For example : 12-6 is a half fact because 6 is half of 12.

14-7=7 16-8=8 18 -9 =9 22-11=11 24-12=12

Please note that these are some ways to look at addition and subtraction. The goal is not for students to memorize all these strategies but to use the ones that make sense to them when dealing with numbers. While it is helpful for students to develop automaticity with facts, understanding how to get an answer to a fact you don't recall is even more powerful. It enables students to learn how our number system works and to feel empowered, rather then frightened when they forget. These strategies are meant to help students. Some are more useful than others and different minds will be attracted to different ones.

Addition Strategies

① 34 + 28

30 4 20 8

30 + 20 = 50

8 + 4 = 12

62

② friendly numbers

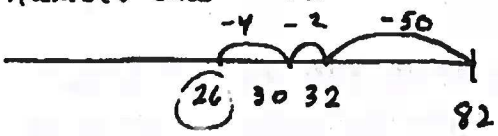
26 + 19 = ↓

25 + 20 = 45

③ standard algorithm

Subtraction Strategies

① number line 82 – 56



② Box 1st number – break up 2nd numb.

43 – 28

20 5 3

43 – 20 = 23

23 – 3 = 20

③ Standard algorithm

Use a number line to solve the problems below:

The 2nd grade class library usually has 204 fiction books. 38 of them are "checked out". How many books are left in the class library?

A pet shop has 126 fish for sale. 69 of them are goldfish. How many are NOT goldfish?

Tommy needs 136 Lego bricks to build a robot. He has 85 Lego bricks. How many more must he get to build the robot?

Circle the "doubles" facts below and write the answer to the circled facts.

$4+7=$ $\quad$ $\begin{array}{r} 8 \\ +\,8 \\ \hline \end{array}$ $\quad$ $7+7=$ $\quad$ $\begin{array}{r} 5 \\ +\,6 \\ \hline \end{array}$

$\begin{array}{r} 12 \\ +\,12 \\ \hline \end{array}$ $\quad$ $3+6=$ $\quad$ $\begin{array}{r} 11 \\ +\,11 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 12 \\ +\,13 \\ \hline \end{array}$

$\_+6=$ $\quad$ $8+6=$ $\quad$ $3+3=$ $\quad$ $10+5=$

Circle the "neighbor" facts below and write the answer to the circled facts.

$7+8=$ $\quad$ $5+6=$ $\quad$ $\begin{array}{r} 4 \\ +\,4 \\ \hline \end{array}$

$9+8=$ $\quad$ $\begin{array}{r} 4 \\ +\,3 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 7 \\ +\,6 \\ \hline \end{array}$

$6+6=$ $\quad$ $4+6=$ $\quad$ $12+11=$

Example: $8 + 3 + 2 + 6 + 7 =$

$10 + 10 + 6 = \boxed{26}$

Add the number strings below.
(Find tens)

$8 + 4 + 6 + 2 + 9 + 1 =$ _____

$6 + 3 + 4 + 2 + 5 =$ _____

$12 + 2 + 8 + 6 + 4 + 20 =$ _____

$4 + 5 + 4 + 5 + 3 + 7 =$ _____

Fact Practice

$6 + 6 =$ ____ $7 + 7 =$ ____

$4 + 5 =$ ____ $8 + 3 =$ ____

$9 + 3 =$ ____ $3 + 5 =$ ____

$7 + 6 =$ ____ $8 + 9 =$ ____

$5 + 7 =$ ____ $4 + 8 =$ ____

$4 + 9 =$ ____ $5 + 8 =$ ____

Fact Practice

$10 - 8 =$ _____ $12 - 6 =$ _____

$7 - 5 =$ _____ $8 - 3 =$ _____

$12 - 4 =$ _____ $11 - 6 =$ _____

$9 - 6 =$ _____ $12 - 7 =$ _____

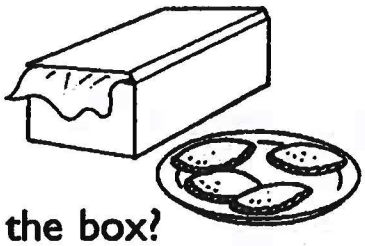
$8 - 6 =$ _____ $9 - 3 =$ _____

$11 - 2 =$ _____ $11 - 4 =$ _____

$11 - 8 =$ _____ $12 - 3 =$ _____

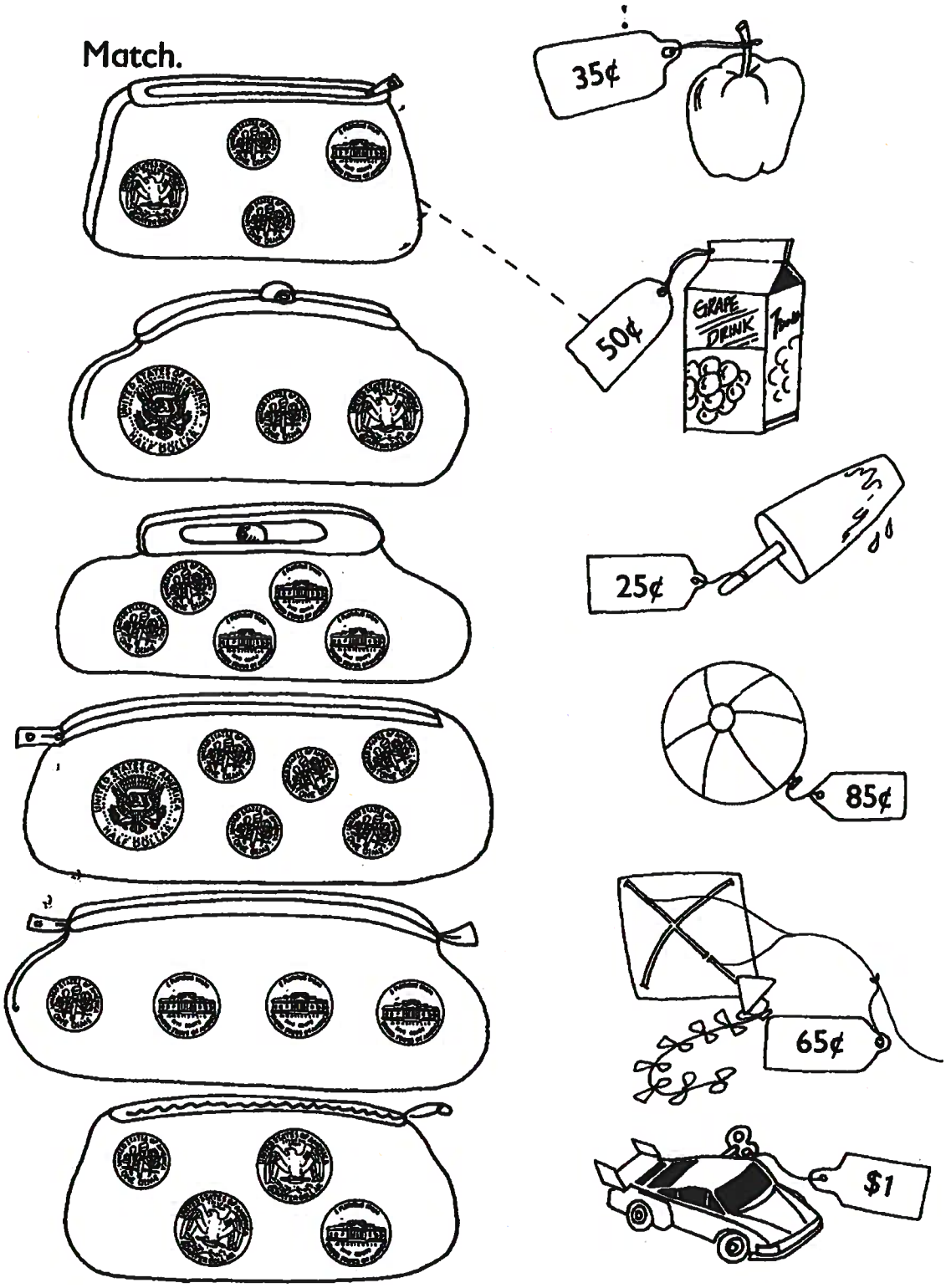
After giving away 9 shells, John had 6 shells left.
How many shells did he have at first?

Nicole bought 12 pastries.
She put 4 of them on a plate.
She put the rest in a box.
How many pastries were there in the box?



Mary has 11 story books.
She has 4 more story books than Sally.
How many story books does Sally have?

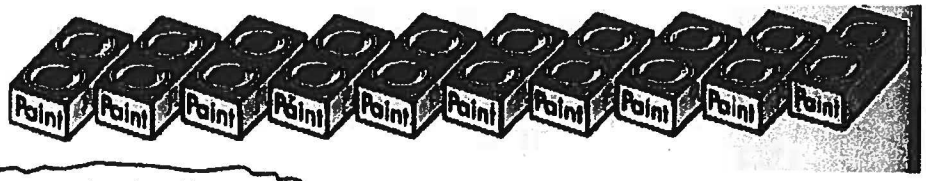
Match.



Preston has 5 toy cars. He wants to replace all the wheels with new extra fast rubber wheels. The new wheels cost $1 each. How much money does Preston need for new wheels?

Brody's family went for a walk after dinner. There were 3 people and 2 dogs on the walk. They all stepped in a huge puddle. How many wet feet (and paws) are on the walk ?

How many cans of paint are in the picture below? _____



Optional Challenge

If each can costs $3.50 and James buys 4 cans of paint using a $20 bill, how much money will he have left?

Algebra Challenge: Find the value of 

If $4 + 8 + 2 +$  $= 20$ then  = _____

If $25 + 25 +$  $= 60$ then  = _____

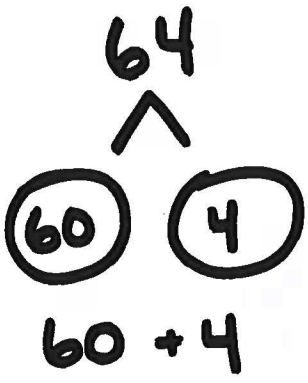
If  $+ 12 + 12 = 30$ then  = _____

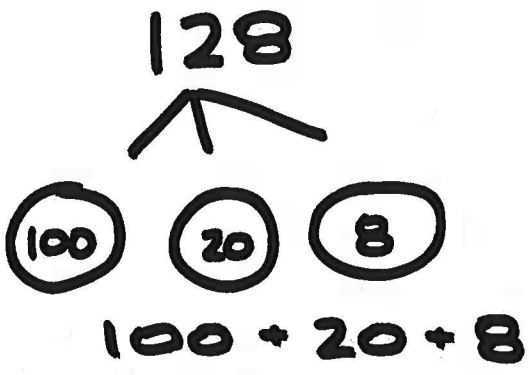
If $12 -$  $= 5$ then  = _____

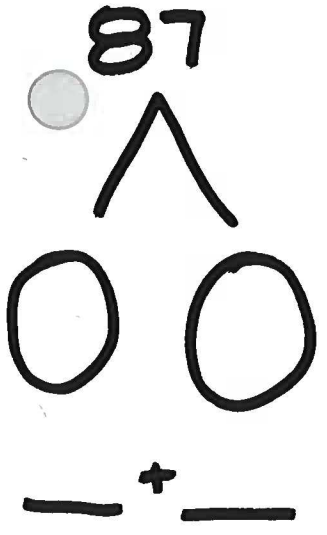
If $16 + 8 + 4 +$  $= 15 + 15$ then  = _____

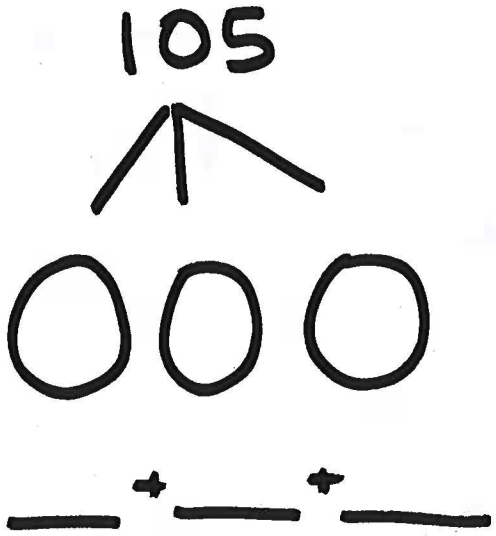
BREAK into PLACE VALUE

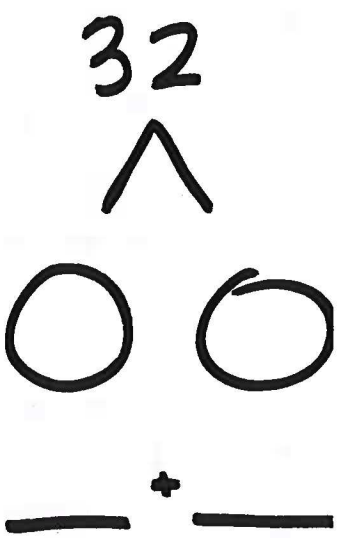
Example:

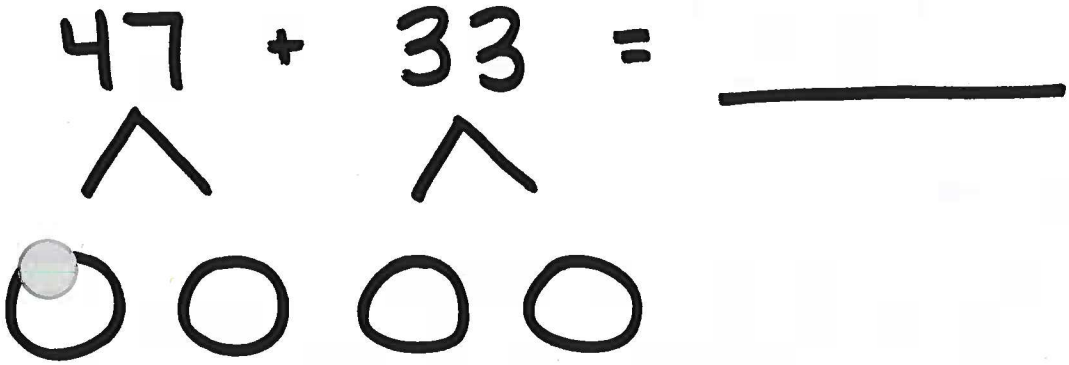






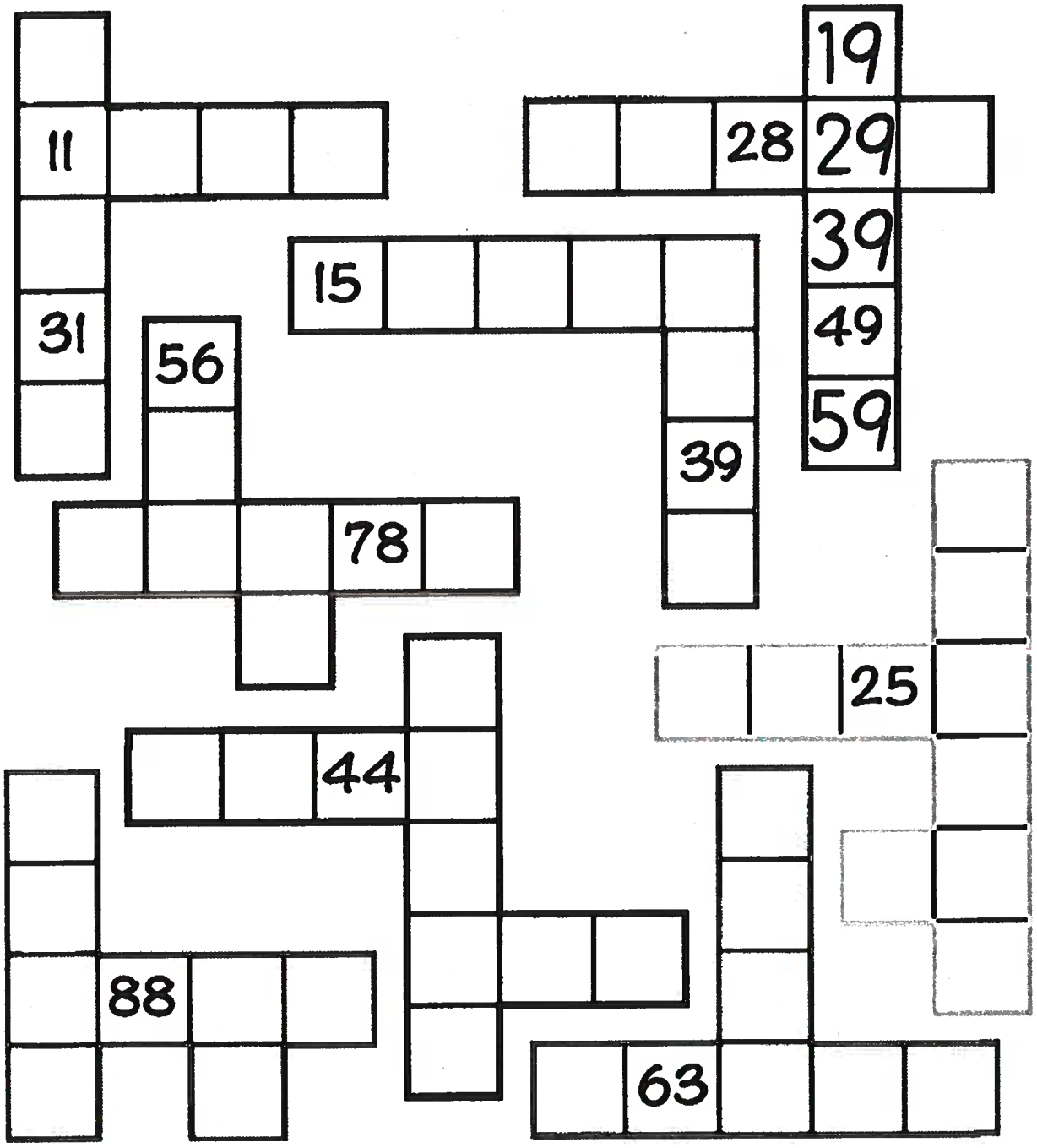






Hundreds of Pieces!

Use your knowledge of the hundreds chart to fill in the empty boxes on the puzzle pieces below!



Date _____ Name _____

Just the Facts 3

STOP Don't start yet! Star two problems that may have even answers.

1. 3 + 5 = ____ **2.** 7 + 3 = ____ **3.** 6 + 5 = ____ **4.** 7 + 8 = ____

5. 4 + 4 = _____ **6.** 7 + 2 = _____ **7.** 6 + 4 = _____

8. 9 + 3 = _____ **9.** 6 + 7 = _____ **10.** 9 + 9 = _____

Go On What numbers come next? 5, 10, 15, _____, _____, _____

Date _____ Name _____

Just the Facts 4

STOP Don't start yet! Star two problems that may have answers less than 10.

1. 4 + 2 = ____ **2.** 2 + 8 = ____ **3.** 6 + 6 = ____ **4.** 8 + 6 = ____

5. 3 + 3 = _____ **6.** 2 + 7 = _____ **7.** 5 + 7 = _____

8. 9 + 4 = _____ **9.** 6 + 9 = _____ **10.** 8 + 7 = _____

Go On Write three facts that equal 12.

_____

Date _____ Name _____

Just the Facts 5

STOP Don't start yet! Star the problem that may have the smallest answer.

1. 2	**2.** 3	**3.** 9	**4.** 5
+2	+6	+3	+9
___	___	___	___

5. 7 + 2 = _____ **6.** 1 + 8 = _____ **7.** 6 + 5 = _____

8. 5 + 8 = _____ **9.** 7 + 7 = _____ **10.** 8 + 9 = _____

Go On What numbers come next? 3, 6, 9, _____, _____, _____

Date _____ Name _____

Just the Facts 6

STOP Don't start yet! Star two problems that may have answers greater than 12.

1. 5	**2.** 4	**3.** 9	**4.** 4
+1	+6	+2	+9
___	___	___	___

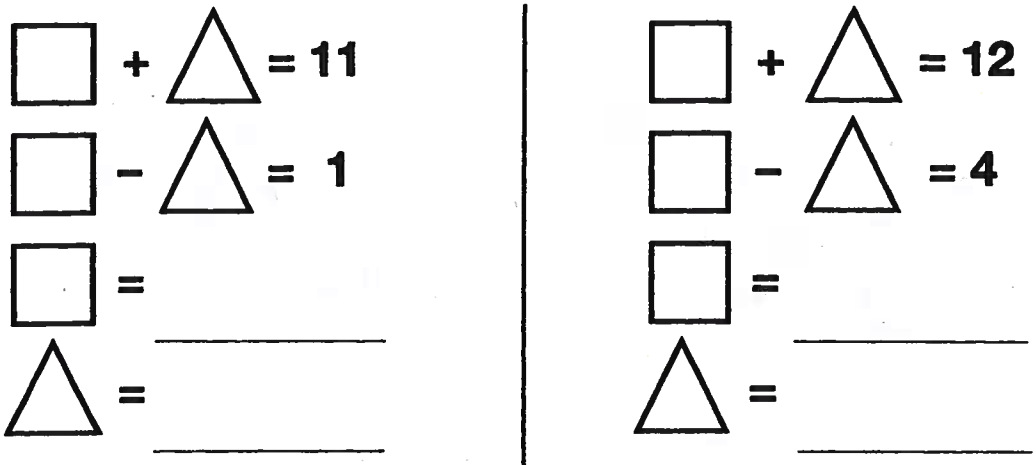
5. 3 + 4 = _____ **6.** 3 + 7 = _____ **7.** 7 + 5 = _____

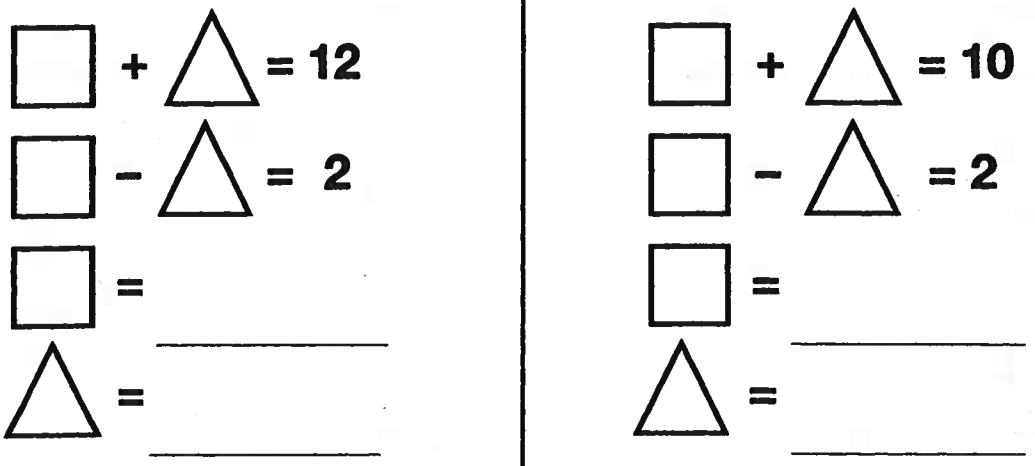
8. 4 + 8 = _____ **9.** 9 + 8 = _____ **10.** 8 + 7 = _____

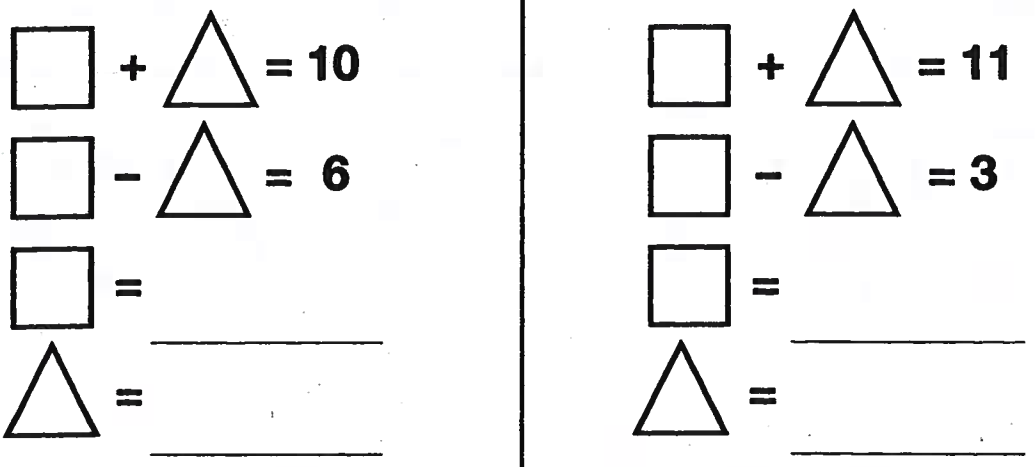
Go On Write three facts that equal 13.

Date _____ Name _____

Mystery Numbers Practice I



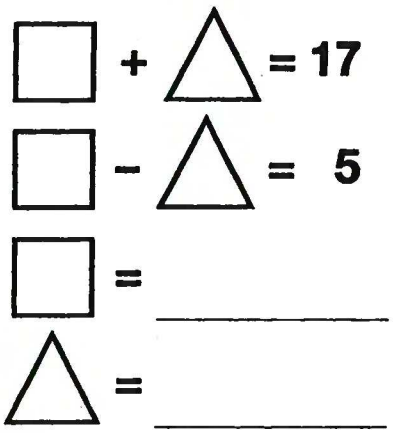


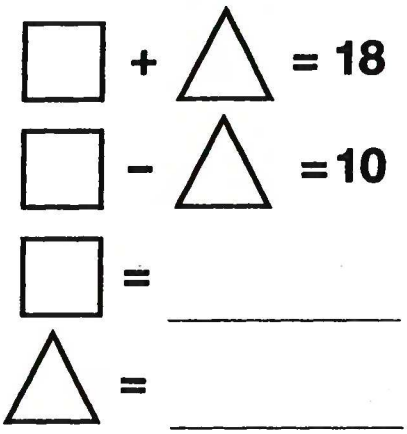


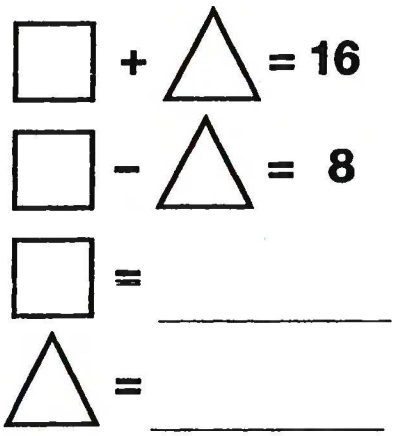
Date _____ Name _____

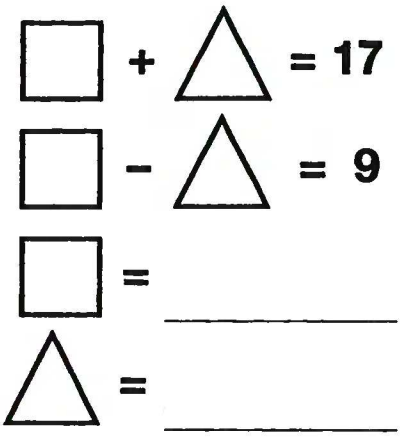
Mystery Numbers Practice II

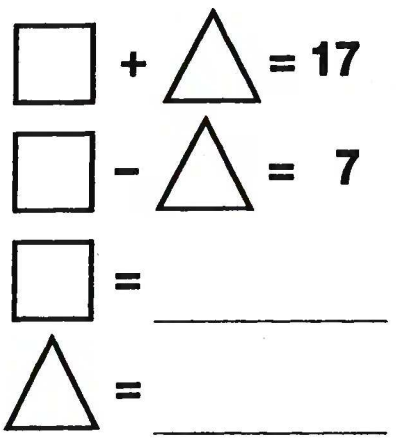
Clue: All squares on this page cover 2-digit numbers.

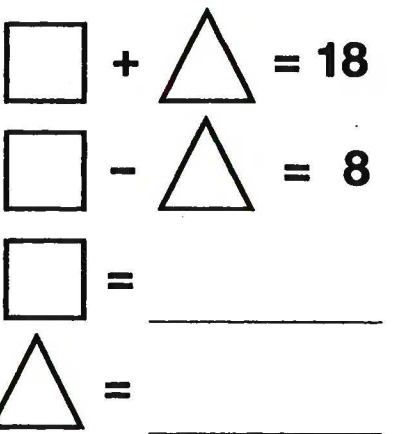










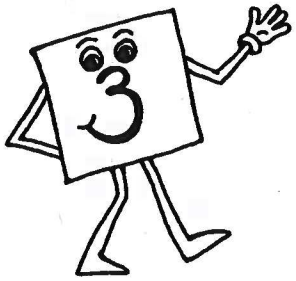


Date _____ Name _____

Making Equations Practice I

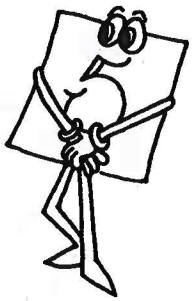
Use 1, 2, and 4 to complete these number sentences.

1. ☐ − ☐ − ☐ = 1
2. ☐ + ☐ − ☐ = 3



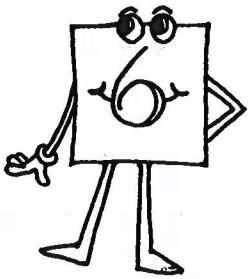
Use 1, 3, and 6 to complete these number sentences.

3. ☐ − ☐ + ☐ = 4
4. ☐ − ☐ − ☐ = 2



Use 1, 3, and 5 to complete these number sentences.

5. ☐ + ☐ − ☐ = 7
6. ☐ + ☐ − ☐ = 3



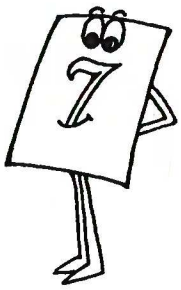
Use + or − signs to complete these number sentences.

7. 4 ☐ 3 ☐ 2 = 5
8. 4 ☐ 3 ☐ 2 = 3
9. 5 ☐ 3 ☐ 1 = 7
10. 5 ☐ 3 ☐ 1 = 3

Date _____ Name _____

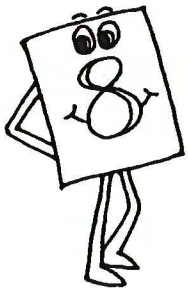
Making Equations Practice II

Use 4, 5, and 8 to complete these number sentences.



1. ☐ − ☐ + ☐ = 7
2. ☐ + ☐ − ☐ = 1
3. ☐ − ☐ + ☐ = 9

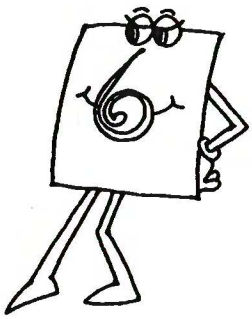
Use 7, 8, and 9 to complete these number sentences.



4. ☐ + ☐ − ☐ = 6
5. ☐ + ☐ − ☐ = 8
6. ☐ − ☐ + ☐ = 10

Use + or − signs to complete these number sentences.

7. 9 ☐ 4 ☐ 5 = 10
8. 9 ☐ 4 ☐ 5 = 8
9. 9 ☐ 4 ☐ 5 = 18



Show how many different equations you can make using 9, 6, and 2.

Date _____ Name _____

Sensible Cents 2

STOP Don't start yet! Star two problems that may have coins worth less than 40¢.

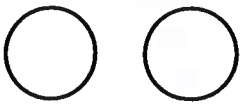
1. 25¢ 

2. 55¢ 

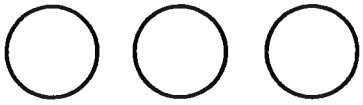
3.  = _____ ¢

4.  = _____ ¢

5. Use 2 coins to make 15¢.



6. Use 3 coins to make 51¢.



7–8. Find the change.

Price	Payment	Change
29¢		_____ ¢
40¢		_____ ¢

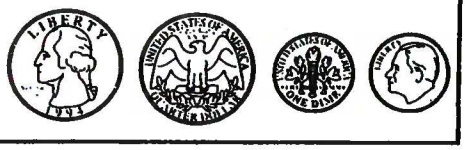
9–10. Show 32¢ two ways.

Go On Use the fewest number of coins to make 45¢. Explain how you know.

Date _____ Name _____

Sensible Cents 3

STOP Don't start yet! Star two problems that may have coins worth more than 55¢.

1. 45¢ 

2. 27¢ 

3.  = _____ ¢

4.  = _____ ¢

5. Use 2 coins to make 26¢.

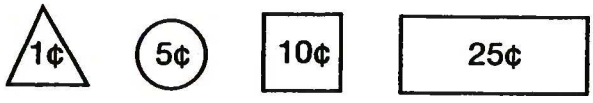
6. Use 3 coins to make 60¢.

7–8. Find the change.

Price	Payment	Change
31¢		_____ ¢
53¢		_____ ¢

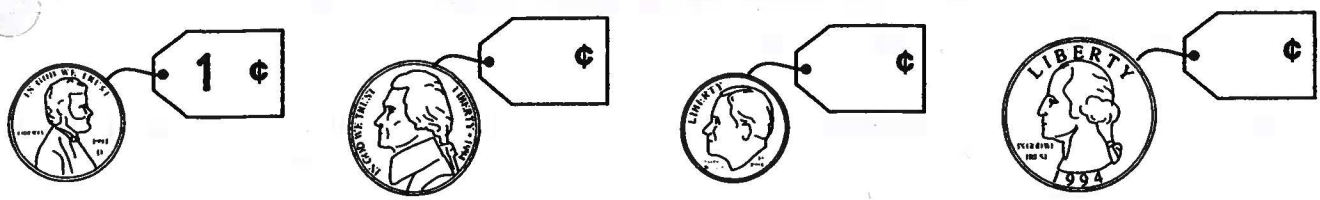
9–10. Show 49¢ two ways.

Go On These shapes have values of Draw a picture worth 83¢.



Date _____ Name _____

Find the Combination



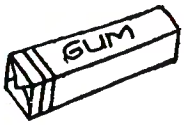
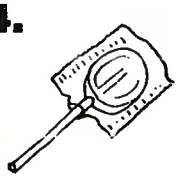
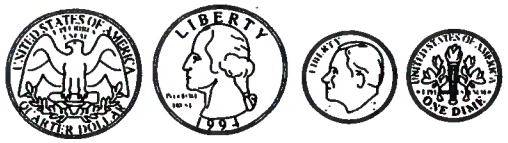
Find a coin combination to match the amount on the price tag. Use the exact number of coins indicated by the circles.

1. 27¢ 25¢ 1¢ 1¢	**2.** 16¢ ○ ○ ○
3. 36¢ ○ ○ ○	**4.** 40¢ ○ ○ ○
5. 17¢ ○ ○ ○ ○	**6.** 26¢ ○ ○ ○ ○
7. 25¢ ○ ○ ○ ○	**8.** 21¢ ○ ○ ○ ○
9. 30¢ ○ ○ ○ ○	**10.** 35¢ ○ ○ ○ ○

Date _____ Name _____

What's My Change?

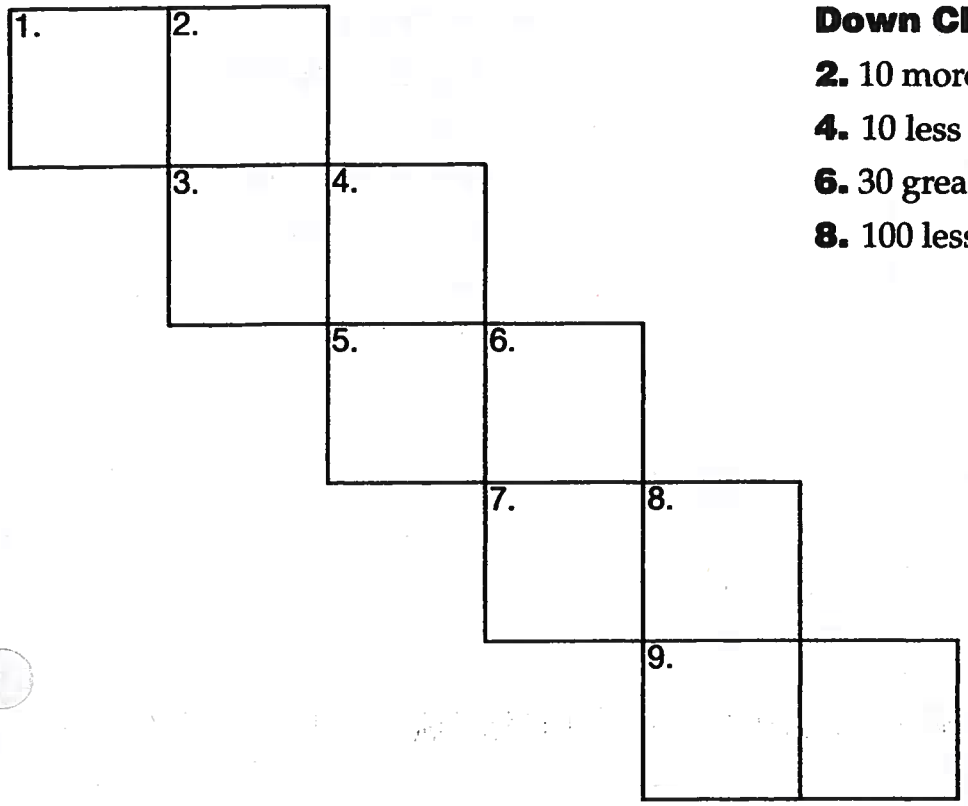
Find your change if you buy each item.

Item	Payment	Change
1.  22¢ jawbreaker	 25 ¢	3 ¢
2.  27¢ mints	 ____ ¢	____ ¢
3.  38¢ gum	 ____ ¢	____ ¢
4.  29¢ lollipop	 ____ ¢	____ ¢
5.  31¢ licorice	 ____ ¢	____ ¢
6.  62¢ jelly beans	 ____ ¢	____ ¢
7.  55¢ candy bar	 ____ ¢	____ ¢

Date _____ Name _____

Staircase Number Puzzle I

Use the clues to solve this puzzle and discover some trivia.



Down Clues

2. 10 more than 26

4. 10 less than 95

6. 30 greater than 62

8. 100 less than 146

Across Clues

Use your 100 Chart to help find these numbers.

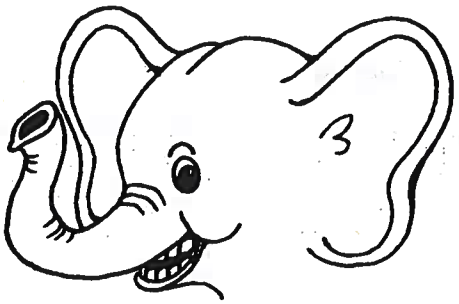
1. 44 ↓ ← = _____

3. 38 ↓ ↓ ↓ = _____

5. 70 ↑ ← = _____

7. 36 ↑ ← ← = _____

9. 59 ↓ ← ← = _____

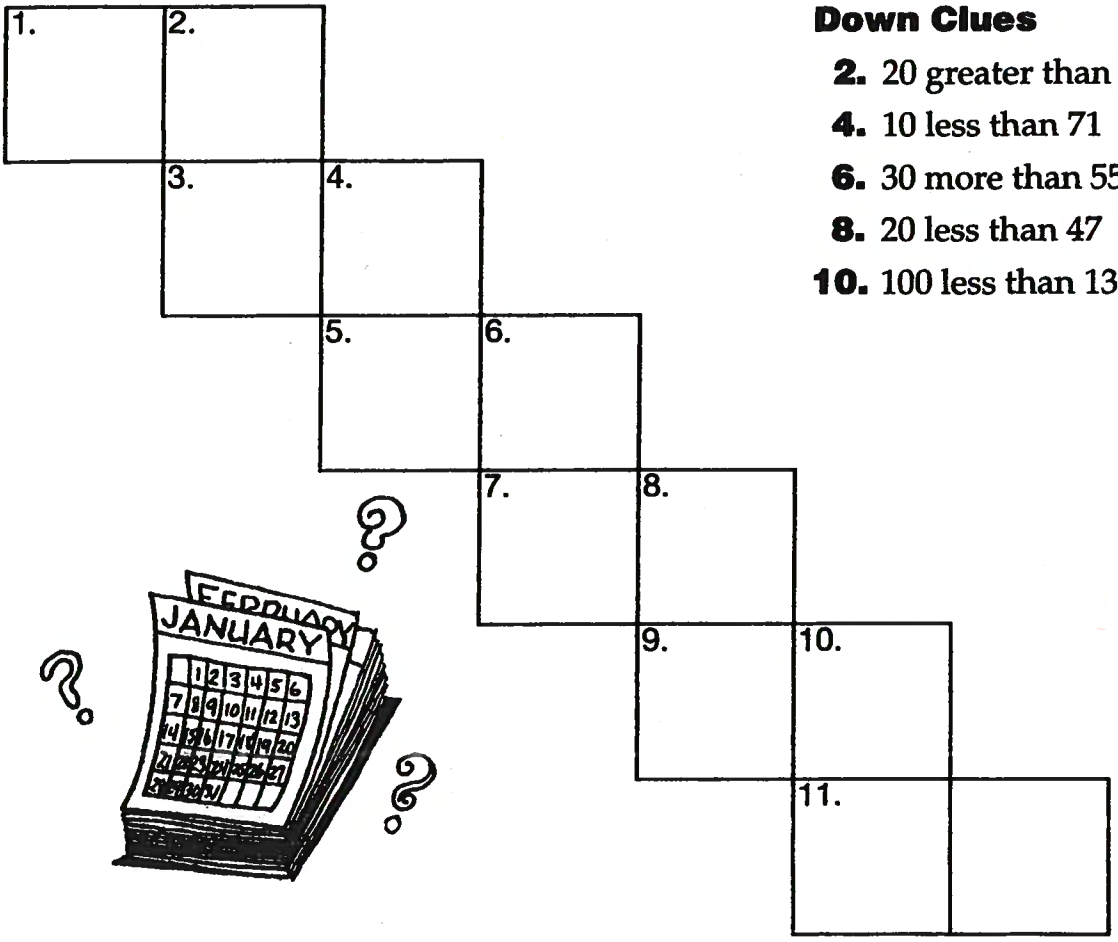


Trivia: Number 7 across tells the number of teeth in an elephant's mouth.

Date _____ Name _____

Staircase Number Puzzle II

Use the clues to solve this puzzle.



Down Clues

2. 20 greater than 54

4. 10 less than 71

6. 30 more than 55

8. 20 less than 47

10. 100 less than 134

Across Clues

Use your 100 Chart to help find these numbers.

1. 45 ↓ → → = _____

3. 58 ↑ ← ← = _____

5. 37 ↑ ↑ → = _____

7. ??? (See Hint below.)

9. 84 ↑ ↑ ↓ ← = _____

11. 70 ↑ ← ↑ = _____

Hint: The answer to Number 7 is the number of weeks in a year.

Date _____ Name _____

Creating Numbers I

Use two of the three digits for each answer.

Use 2, 3, or 5.

1. Make a number less than 45. ____ ____
2. Make an odd two-digit number. ____ ____
3. Make a number greater than 35. ____ ____
4. Make the smallest possible two-digit number. ____ ____

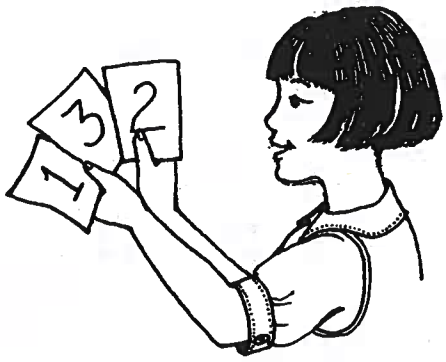
Use 3, 4, or 9.

5. Make a number ten more than 33. ____ ____
6. Make a number between 30 and 40. ____ ____
7. Make the largest possible two-digit number. ____ ____

Use 2, 5, or 8.

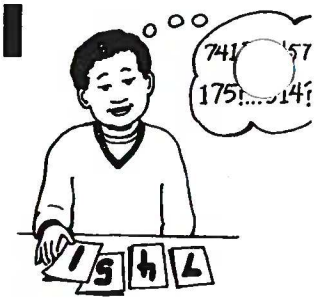
8. Make a number ten less than 92. ____ ____
9. Make a number between 40 and 60. ____ ____
10. Make the smallest possible even number. ____ ____

2	3	4	5	8	9



Date _____ Name _____

Creating Numbers II



Use three of the four digits for each answer.

Use 1, 4, 6, or 7.

1. Make a number greater than 650. ___ ___ ___
2. Make an even number between 400 and 600. ___ ___ ___
3. Make an odd number less than 400. ___ ___ ___
4. Make the smallest possible number. ___ ___ ___

Use 2, 5, 7, or 8.

5. Make a number less than 400. ___ ___ ___
6. Make a number between 700 and 800. ___ ___ ___
7. Make the largest possible odd number. ___ ___ ___
8. Make an even number greater than 800. ___ ___ ___

Use 1, 3, 6, or 9.

9. Make a number between 500 and 700. ___ ___ ___
10. Make an even number less than 300. ___ ___ ___
11. Make an odd number that is between 300 and 500. ___ ___ ___
12. Make the largest possible even number. ___ ___ ___

1	2	3	4	5	6	7	8	9

Date _____ Name _____

Sum It Up 3

STOP Don't start yet! Star the problem that may have the greatest answer.

1. 15 + 7 = _____ **2.** 32 + 4 + 5 = _____ **3.** 54 + 9 = _____

4. 43 + 9 = _____ **5.** 56 + 23 = _____

6.	**7.**	**8.**	**9.**	**10.**
63	68	45	37	125
+ 8	+ 7	+ 27	+ 48	+ 6
____	____	____	_____	_____

Go On Write three equations that equal 25.

Date _____ Name _____

Sum It Up 4

STOP Don't start yet! Star two problems that may have odd answers.

1. 18 + 3 = **2.** 26 + 4 + 3 = **3.** 55 + 7 =

4. 52 + 9 = **5.** 35 + 24 =

6.	**7.**	**8.**	**9.**	**10.**
54	79	57	38	143
+ 8	+ 9	+ 25	+ 28	+ 8
____	____	____	_____	_____

Go On Write another equation that fits. Please explain your answer.

35 + 15 =	33 + 17 =
28 + 22 =	

Date _____ Name _____

Sum It Up 5

STOP Don't start yet! Star three problems that may have even answers.

1. 17 + 7 = _____ **2.** 41 + 6 + 3 = _____ **3.** 28 + 6 = _____

4. 34 + 9 = _____ **5.** 54 + 35 = _____

6.	**7.**	**8.**	**9.**	**10.**
49	65	48	48	165
+ 4	+ 9	+ 25	+ 39	+ 7
____	____	____	_____	_____

Go On Write three equations that equal 30.

Date _____ Name _____

Sum It Up 6

STOP Don't start yet! Star the problems that may have the lowest answer.

1. 19 + 3 = _____ **2.** 34 + 5 + 4 = _____ **3.** 35 + 6 = _____

4. 73 + 8 = _____ **5.** 64 + 13 = _____

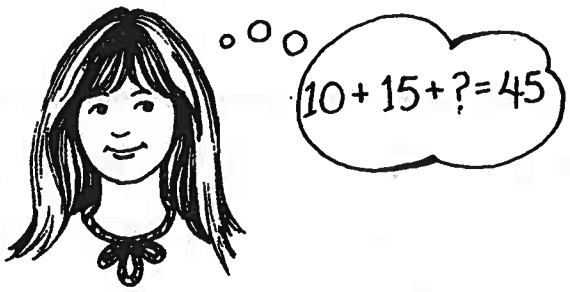
6.	**7.**	**8.**	**9.**	**10.**
65	89	36	37	158
+ 7	+ 8	+ 34	+ 47	+ 5
____	____	____	_____	_____

Go On What number comes next? 23, 28, 33, 38, _____ , _____

Date _____ Name _____

Making Sums II

Use the numbers in the box to create addition problems.



10	15
17	20

_____ + _____ = 30 _____ + _____ = 32

_____ + _____ = 35 ___ + 10 + ___ = 45

15	10
20	9

_____ + _____ = 30 _____ + _____ = 25

_____ + _____ = 24 15 + ___ + ___ = 34

30	11
25	15

_____ + _____ = 41 _____ + _____ = 40

_____ + _____ = 45 _____ + _____ = 26

___ + ___ + 11 = 51 ___ + 30 + ___ = 70

20	30
25	9

_____ + _____ = 45 _____ + _____ = 39

___ + ___ + 30 = 59 30 + ___ + ___ = 75

Make a *new sum* using three of the numbers 30, 25, 20, and 9.

_____ + _____ + _____ = _____

Date _____ Name _____

Searching for 30

Find three in a row that equal 30. One is done as an example.

14	6	10	7	15
5	13	6	11	6
7	9	14	7	9
15	8	8	12	10

Search Results

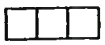
5-6 Good

7-8 Great!

9-10 Terrific!!

11 Wow!!!

Record your findings.

Across 

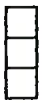
14 + 6 + 10 = 30

_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

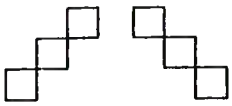
Down 

_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

Diagonals 

_____ + _____ + _____ = 30

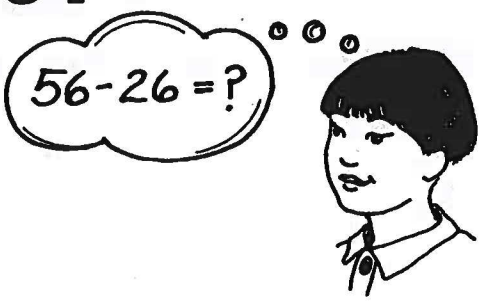
_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

_____ + _____ + _____ = 30

Date _____ Name _____

Finding Pairs I



Use the numbers in the box to create subtraction problems.

66	36	____ − ____ = 10	____ − ____ = 30
56	26	____ − ____ = 20	____ − ____ = 40

40	25	____ − ____ = 5	____ − ____ = 15
30	15	____ − ____ = 10	____ − ____ = 25

44	14	____ − ____ = 30	____ − ____ = 15
24	9	____ − ____ = 5	____ − ____ = 35

Make two **new differences** by using the numbers in the box.

45	25	____ − ____ = ____	
35	15	____ − ____ = ____	

Date _____ Name _____

Finding Pairs II

Use the numbers in the box to create subtraction problems.

75	25
50	15

_____ − _____ = 50 _____ − _____ = 10

_____ − _____ = 60 _____ − _____ = 25

51	21
31	7

_____ − _____ = 30 _____ − _____ = 14

_____ − _____ = 44 _____ − _____ = 24

49	29
39	11

_____ − _____ = 20 _____ − _____ = 38

_____ − _____ = 28 _____ − _____ = 18

65	35
55	16

_____ − _____ = 19 _____ − _____ = 30

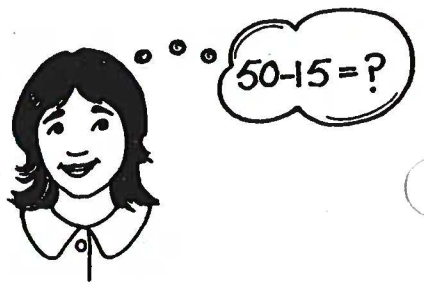
_____ − _____ = 39 _____ − _____ = 49

Make two **new differences** by using the numbers in the box.

42	12
22	15

_____ − _____ = _____

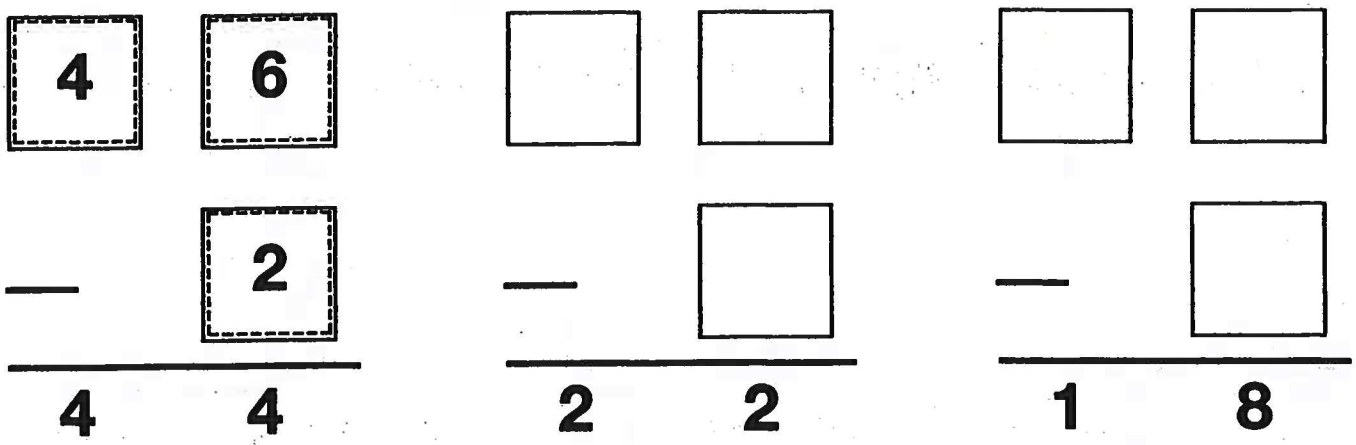
_____ − _____ = _____

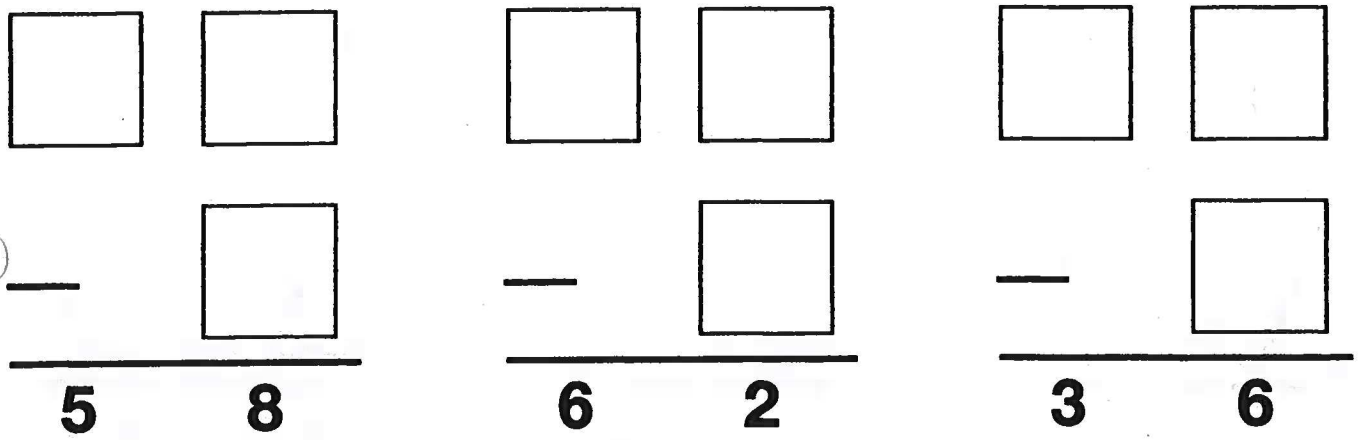


Date _____ Name _____

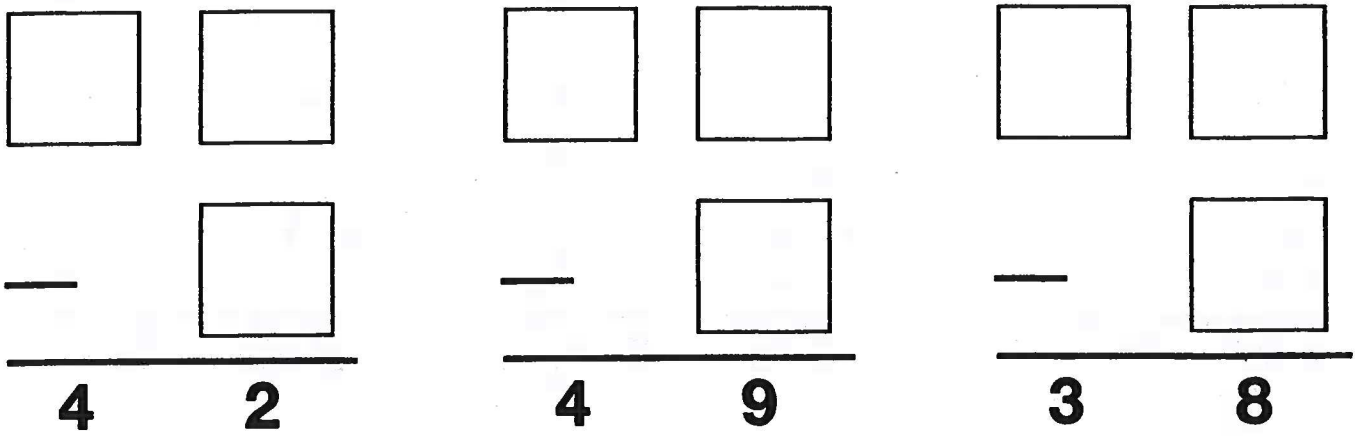
Rearrange and Find I

Place 2, 4, and 6 in the proper squares to make each difference.





Place 3, 4, and 5 in the proper squares to make each difference.

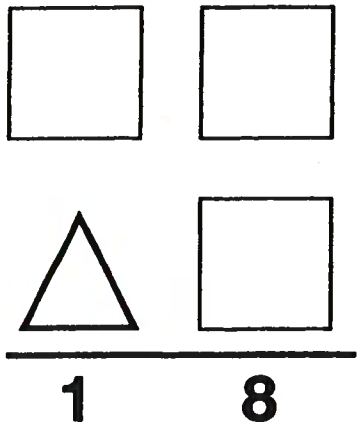


2	3	4	5	6

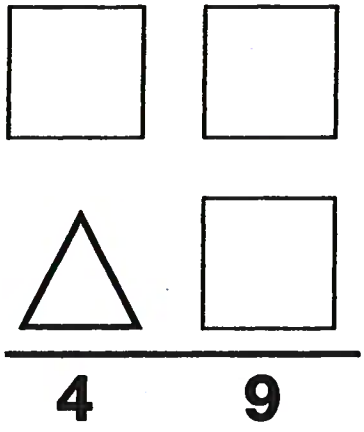
Date _____ Name _____

Rearrange and Find II

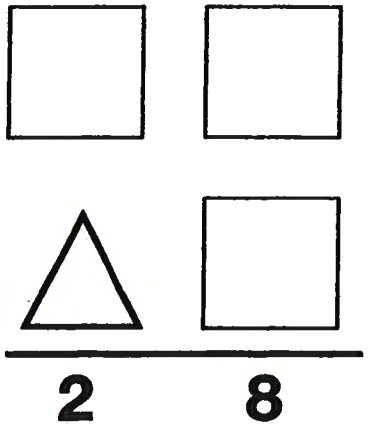
Place 2, 3, and 5 in the squares to make each sum or difference.
Use + or – in the triangles.



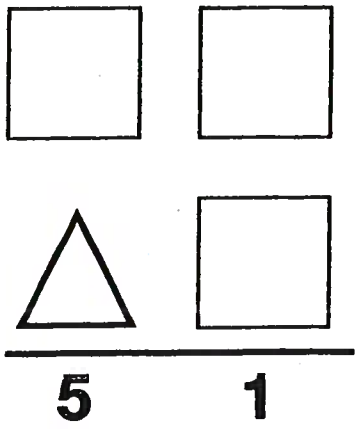
1 8



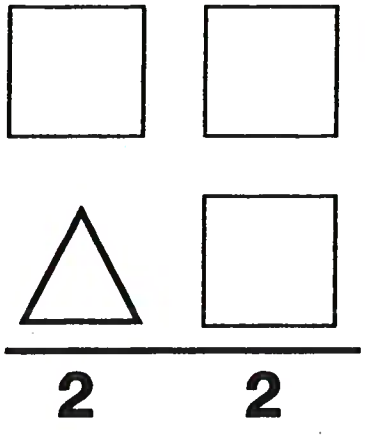
4 9



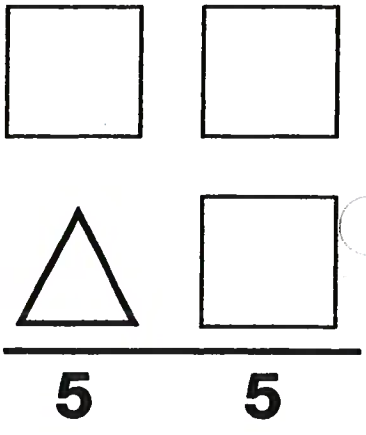
2 8



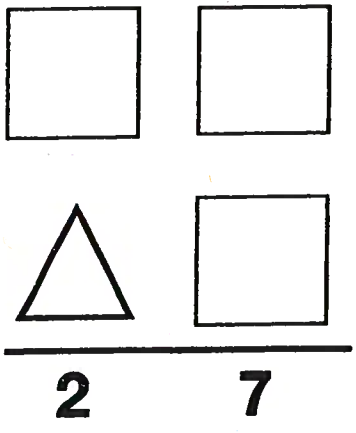
5 1



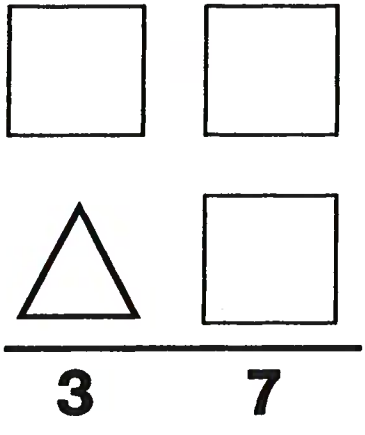
2 2



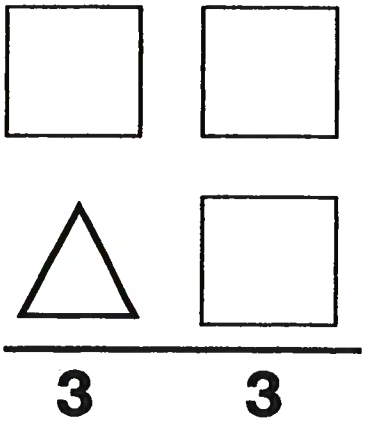
5 5



2 7



3 7



3 3

2	3	5

My Stickers of Birds	
 Owl	○ ○ ○ ○ ○ ○
 Peacock	○ ○ ○
 Parrot	○ ○ ○ ○
 Swan	○ ○ ○ ○ ○
 Eagle	○ ○
Each ○ stands for 2 stickers.	

There are _____ stickers altogether.

There are _____ stickers of swans.

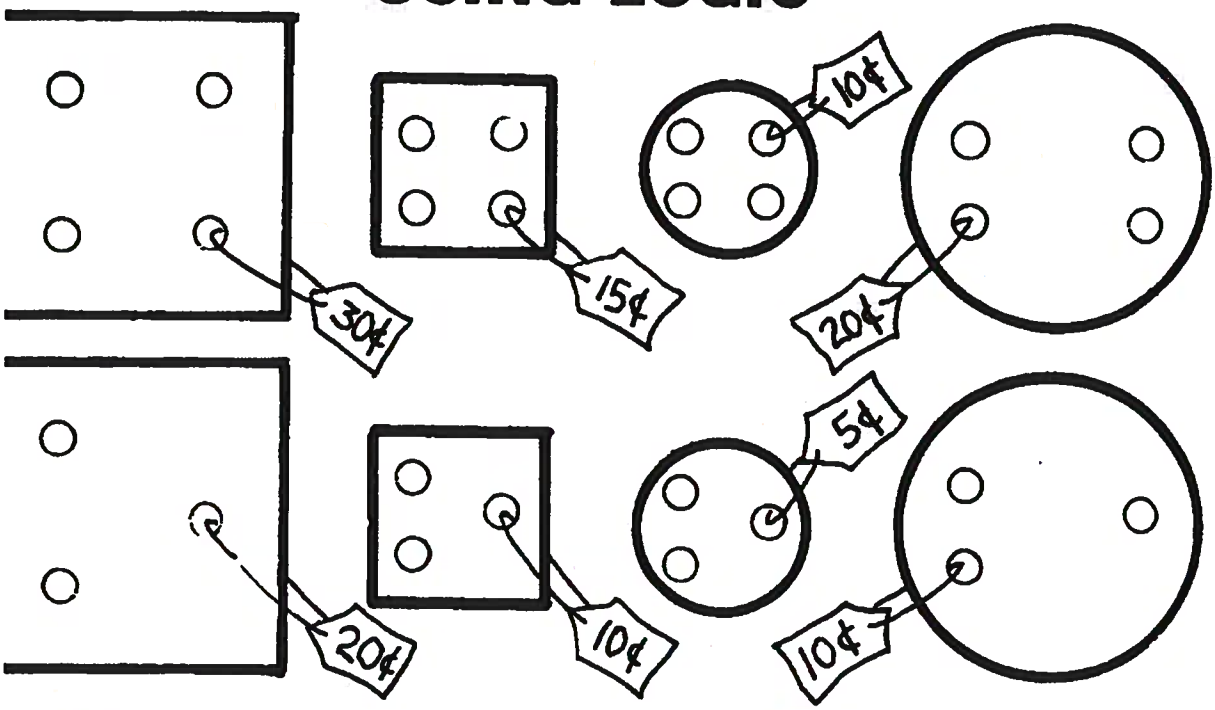
There are _____ more stickers of owls than of parrots.

There are _____ fewer stickers of eagles than of swans.

The number of stickers of _____ is the greatest.

The number of stickers of _____ is the smallest.

USING LOGIC



FACTS

- Alex bought a square button.
- It has 4 holes.
- It is *not* small.

How much did Alex pay for the button? _____

2. **FACTS**

- Megan bought a small button.
- It cost 10¢.
- It has 3 holes.

What shape is the button?

_____

FACTS

- Steven bought 2 different buttons.
- They are both the same size.
- Both buttons have the same number of holes.
- One of the buttons cost 30¢.

How much did the other button cost? _____

4. **FACTS**

- Lucy bought 2 buttons.
- They are *not* the same shape.
- They are *not* the same size.
- They do *not* have 4 holes.
- One of the buttons cost 20¢.

How much did the other button cost? _____

$$\begin{array}{r} 349 \\ +\ 76 \\ \hline \end{array} \qquad \begin{array}{r} 238 \\ +756 \\ \hline \end{array} \qquad \begin{array}{r} 135 \\ +\ 624 \\ \hline \end{array}$$

$$\begin{array}{r} 624 \\ -\ 86 \\ \hline \end{array} \qquad \begin{array}{r} 718 \\ -\ 656 \\ \hline \end{array} \qquad \begin{array}{r} 47 \\ -\ 53 \\ \hline \end{array}$$

Marco's mom gave him $15 to get lunch at Gino's. He bought a turkey sub for $6.50, a bag of chips for $.75 and a water for $2.00. How much change should he get back?

Ethan brought 18 chocolate cupcakes and 14 vanilla cupcakes to the class party. How many cupcakes did he bring altogether?

Ms. Warrington bought a salad for $7, a coffee for $3.50 and a cup of soup for $4.50 She handed the clerk 2 ten dollar bills. How much money should she get back?

Use any strategy ← number line, break apart, algorithm

1. JJ read 36 pages of *The Lightening Thief* on Saturday and 11 pages on Sunday. How many more pages did he read on Saturday than Sunday?

2. Ms. Warrington bought 24 apples. Some were eaten and now she has only 15 apples left. How many were eaten?

3. 85 boys are playing on a basketball team. 38 of the boys have blue uniforms and the rest have red uniforms. How many boys have red?

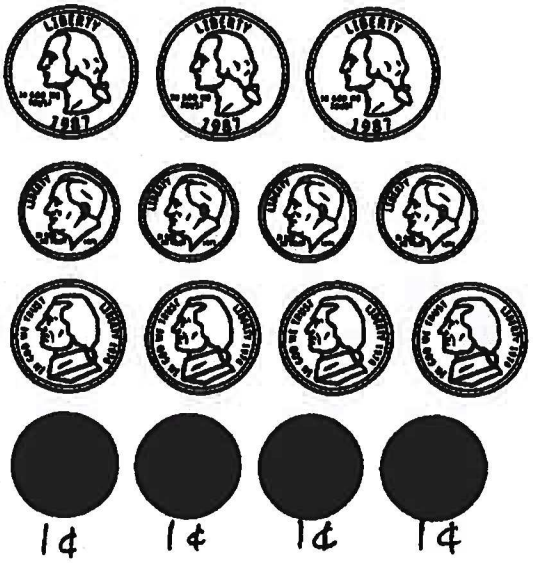
4. 52 people went to a birthday party. 27 of them were adults and the rest were children. How many children went to the party?

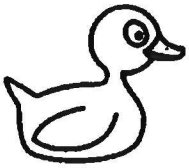
5. Johnny had a Star Wars Lego set with 385 pieces in it. He lost some pieces when he dropped it in the sand. Now he has 343 pieces left. How many pieces are lost?

6. Shane had 3 dozen new pencils in his desk. He gave 15 of them away and kept the rest. How many did he keep?

15¢ each

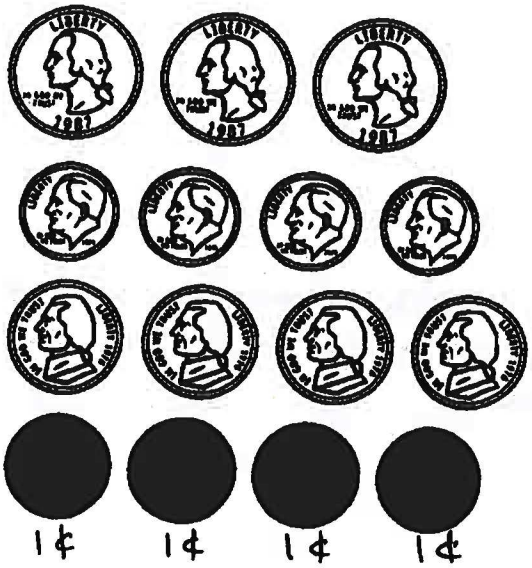
Circle enough money to pay for 3 pencils.



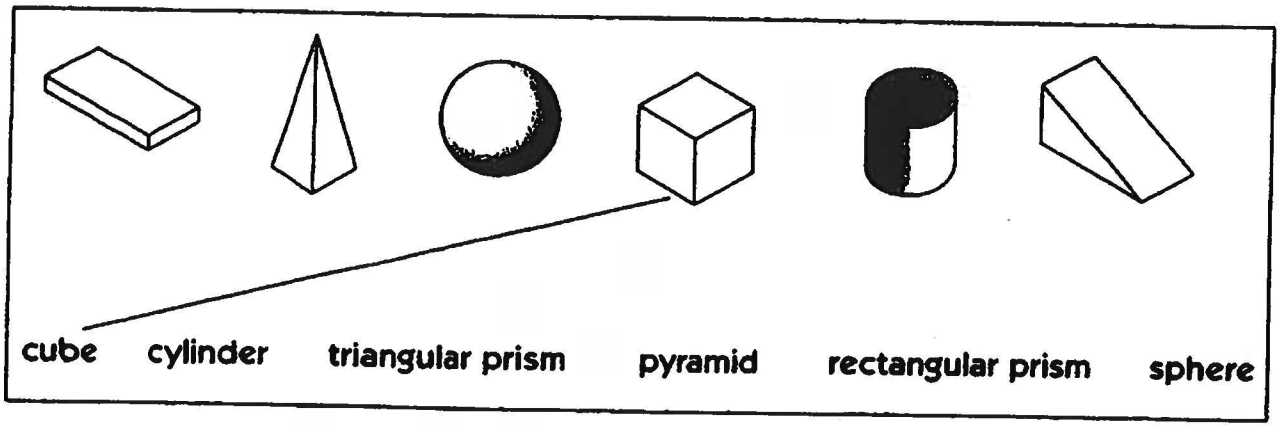


89¢

Circle enough money to pay for 1 duck.



Draw a line from each shape to its name.



A pack of balloons cost $2.65. Kendra paid with a $5.00 bill. How much money should she get back?

There were 39 players on the Red football team and 43 players on the Blue football team. How many players is that altogether?

Ms. Rice planted 84 flowers. 42 of the flowers are red and the rest are white. How many are white?

READ UNDERLINE SHOW NEAT WORK BOX AND LABEL ANSWER

1. Michael has 3 quarters and 2 dimes in is pocket. He wants to buy an icecream that costs $1.20. Does he have enough money? _____ If not, how much more money does he need? _____

His friend gives him 3 coins and now he has enough money to get the icecream. Label the coins his friend gave him below:

2. Hugh found 7 quarters and 2 dimes under his pillow from the toothfairy. Konrad found 5 dimes, 2 quarters and 15 nickels under his pillow. Who received more money or did they each get the same amount?

Hugh's total _____ Konrad's total _____

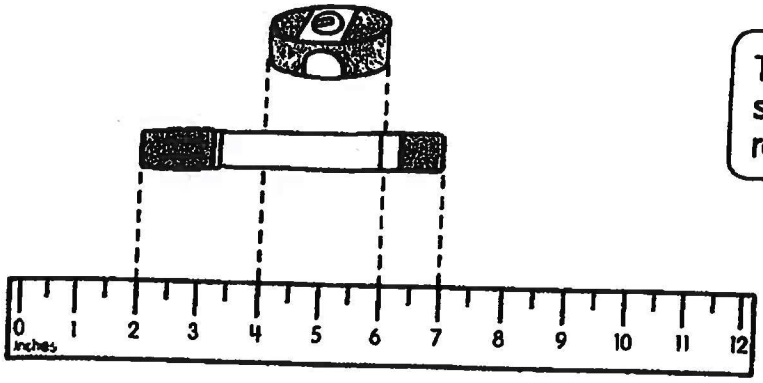
3. If each boy in the class put 12 cents in the same jar every day for 5 days, how much money would be in the jar when the fifth day had ended?

Example

11 more than 23 is 34.

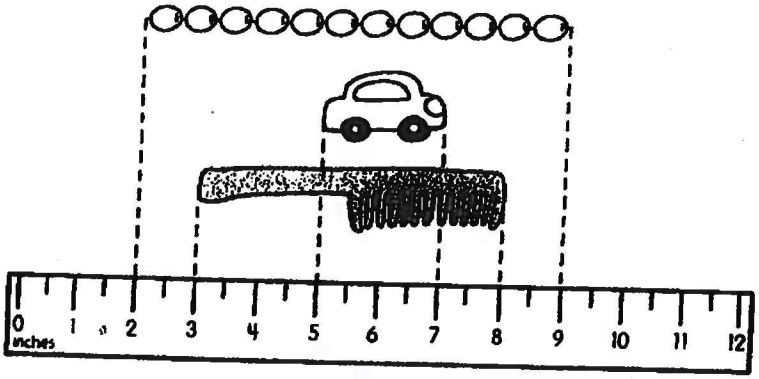
11 less than 35 is 24.

1. 11 more than 29 is _____.
2. 12 more than 19 is _____.
3. 12 more than 26 is _____.
4. 22 less than 31 is _____.
5. 13 more than 27 is _____.
6. 13 more than 36 is _____.
7. 18 less than 25 is _____.
8. 18 less than 40 is _____.
9. _____ is 15 more than 27.
10. _____ is 11 less than 26.
11. _____ is 8 more than 39.
12. _____ is 3 less than 30.
13. _____ is 9 more than 35.
14. _____ is 9 less than 35.



The marker is _____ inches long.

The pencil sharpener is _____ inches long.



The length of the comb is _____ inches.

The length of the string of beads is _____ inches.

The length of the toy car _____ inches.

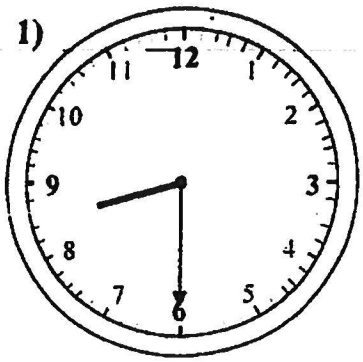
Spencer had 5 quarters. He spent 45 cents on an eraser and 20 cents on a pencil. How much money does he have left?

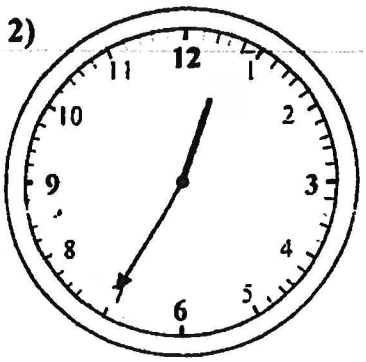
Luke saved his birthday money so he could but a new game. He has four $5 dollar bills and 12 quarters so far. The game he wants costs $25.00. Does he have enough money?

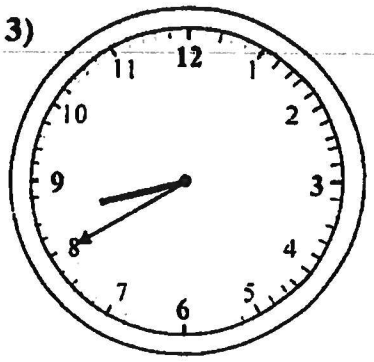
I have 7 coins in my pocket and they add up to 71cents . What could they be? Draw them below.

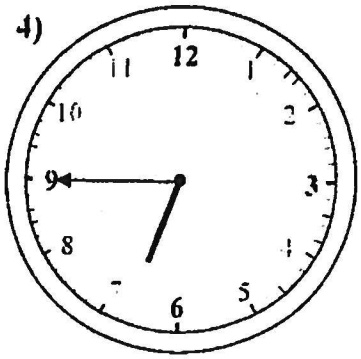
William put 3 dimes, 4 nickels, and 2 quarters in his backpack for the bake sale. Haruto put twice as much money in his backpack. How much money do the 2 boys have altogether?

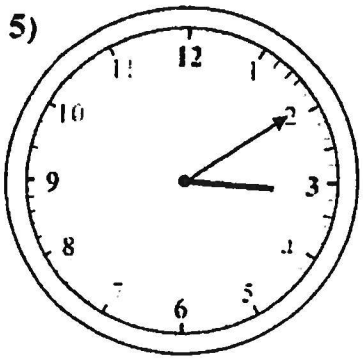
Determine the time on the clock. Minute hands are longer and have an arrow on the end.

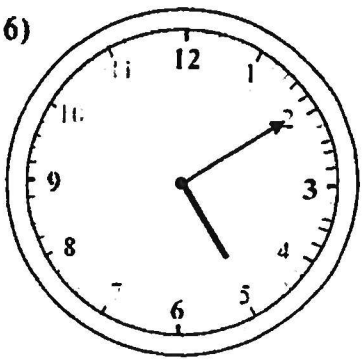
1) 

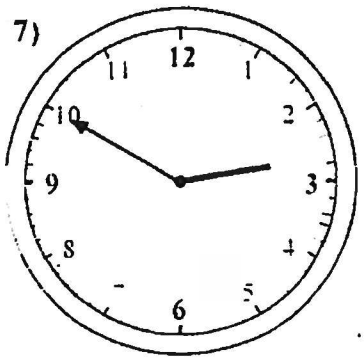
2) 

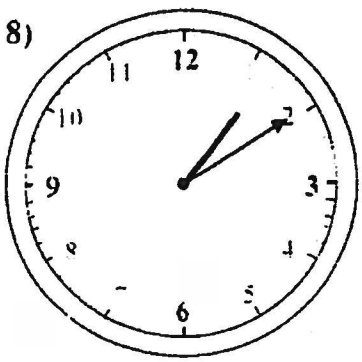
3) 

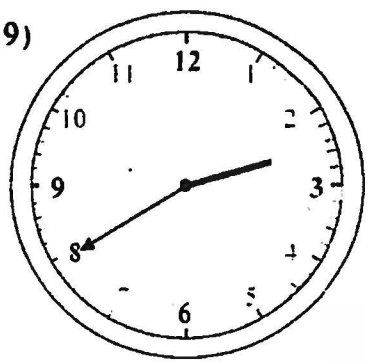
4) 

5) 

6) 

7) 

8) 

9) 

Sam read 145 pages of his book. Connor read 126 pages. How many more pages did Sam read?

A boy at SHB grade was having a birthday party. He brought 45 cupcakes to school. 26 of the cupcakes were chocolate and the rest were strawberry. How many strawberry cupcakes did he bring?

4 dozen boys , 3 dozen girls and 58 adults boarded a plane for LA. How many passengers were on the plane?

Two- and Three-Digit Addition

To find the sum of **2-digit numbers**, add the ones column. Then, add the tens column.

$$\begin{array}{r} 36 \\ +\ 23 \\ \hline 9 \end{array} \qquad \begin{array}{r} 36 \\ +\ 23 \\ \hline 59 \end{array}$$

To find the sum of **3-digit numbers**, add the ones column. Then, add the tens column. Last, add the hundreds column.

$$\begin{array}{r} 372 \\ +\ 614 \\ \hline 6 \end{array} \qquad \begin{array}{r} 372 \\ +\ 614 \\ \hline 86 \end{array} \qquad \begin{array}{r} 372 \\ +\ 614 \\ \hline 986 \end{array}$$

Who has the most money? Study the examples above. Then, solve each problem. Color each sum on the piggy banks. The first bank to be completely filled in is the winner.

A.

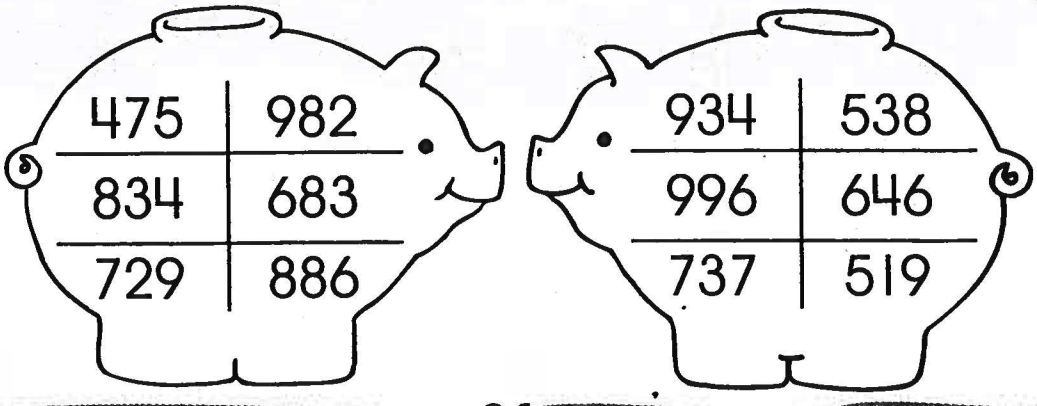
$$\begin{array}{r} 516 \\ +\ 22 \\ \hline \end{array} \qquad \begin{array}{r} 641 \\ +\ 341 \\ \hline \end{array} \qquad \begin{array}{r} 523 \\ +\ 311 \\ \hline \end{array} \qquad \begin{array}{r} 602 \\ +\ 135 \\ \hline \end{array}$$

B.

$$\begin{array}{r} 221 \\ +\ 425 \\ \hline \end{array} \qquad \begin{array}{r} 414 \\ +\ 315 \\ \hline \end{array} \qquad \begin{array}{r} 496 \\ +\ 500 \\ \hline \end{array}$$

C.

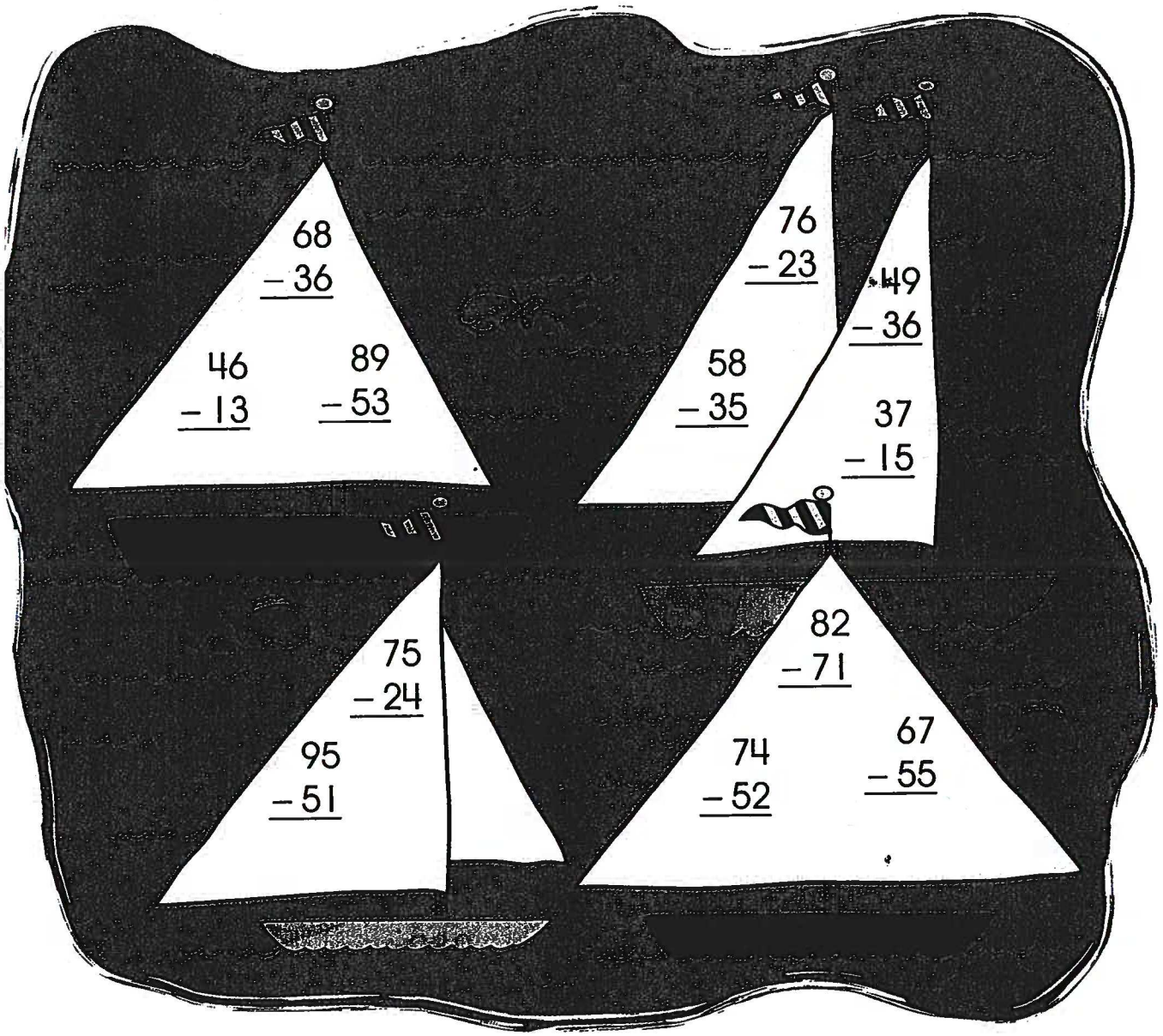
$$\begin{array}{r} 814 \\ +\ 72 \\ \hline \end{array} \qquad \begin{array}{r} 581 \\ +\ 102 \\ \hline \end{array} \qquad \begin{array}{r} 623 \\ +\ 311 \\ \hline \end{array} \qquad \begin{array}{r} 203 \\ +\ 272 \\ \hline \end{array}$$



More Two-Digit Subtraction

basic subtraction

Study the example on page 30. Then, solve each problem.



Addition with Regrouping Practice

Study the example on page 39. Then, solve each problem. Remember to regroup to the tens column.

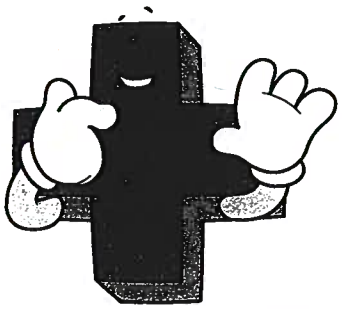
A.	58 + 28	41 + 29	66 + 15	55 + 8	27 + 9	24 + 18
B.	35 + 27	18 + 23	46 + 14	87 + 5	14 + 19	62 + 18
C.	68 + 28	47 + 47	65 + 28	16 + 17	56 + 29	19 + 32
D.	27 + 13	15 + 69	19 + 55	29 + 19	35 + 46	58 + 13
E.	56 + 25	39 + 25	14 + 9	87 + 33	63 + 18	17 + 54
F.	11 + 19	53 + 17	32 + 8	15 + 15	48 + 14	74 + 16

More Regrouping Practice

advanced addition

Study the example on page 39. Then, solve each problem.

A.	18 + 17	11 + 19	46 + 47	38 + 24	29 + 63	35 + 46
B.	13 + 29	33 + 59	58 + 28	25 + 25	28 + 29	66 + 27
C.	17 + 33	74 + 17	13 + 9	88 + 7	67 + 29	11 + 59
D.	44 + 49	18 + 19	48 + 38	55 + 26	89 + 1	43 + 37
E.	74 + 17	17 + 46	37 + 37	22 + 29	57 + 13	15 + 48
F.	63 + 27	35 + 17	41 + 29	25 + 46		

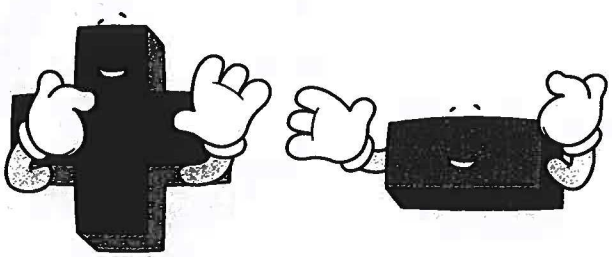


Larger Number Practice

Remember, regrouping with three digits is the same as regrouping with two digits. Just keep regrouping across the problem from right to left.

Study the examples on pages 39 and 44. Then, solve each problem.

A.	233 + 476	429 + 128	782 + 137	329 + 473	883 + 149
B.	842 − 279	711 − 362	620 − 287	423 − 185	907 − 468
C.	271 + 188	779 + 172	564 + 147	178 + 446	981 + 176
D.	834 − 287	703 − 349	513 − 227	800 − 179	614 − 275



Writing Time

Time can be written or said in different ways.

8:15 or

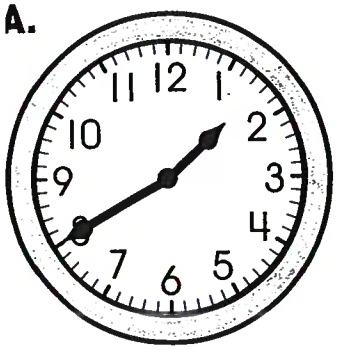
15 minutes

after 8

o'clock

Study the example above. Then, write the time shown on each clock.

A.



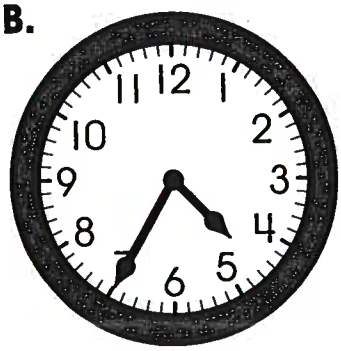
_____ or

_____ minutes

after _____

o'clock

B.



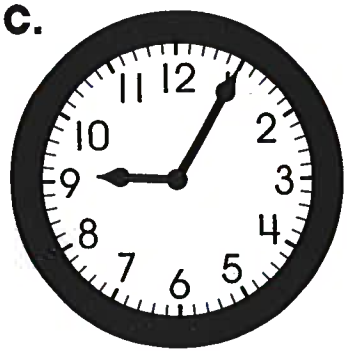
_____ or

_____ minutes

after _____

o'clock

C.



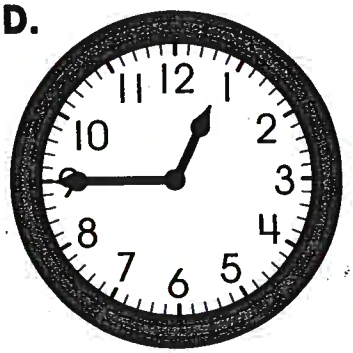
_____ or

_____ minutes

after _____

o'clock

D.



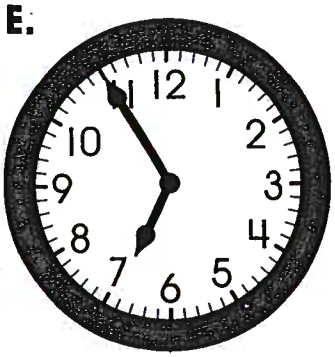
_____ or

_____ minutes

after _____

o'clock

E.



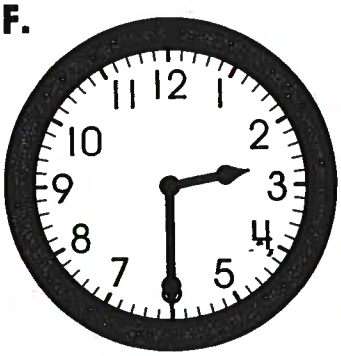
_____ or

_____ minutes

after _____

o'clock

F.



_____ or

_____ minutes

after _____

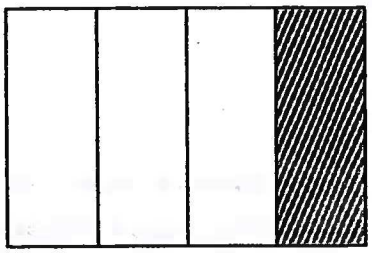
o'clock

Introduction to Fractions

A **fraction** tells how many parts of a whole.
The top number tells how many parts are shaded.
The bottom number tells how many parts in all.

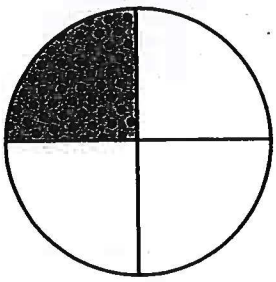
parts shaded → 1

parts in all → 4



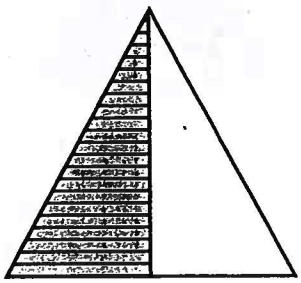
Study the example above. Then, write the correct fraction.

A.



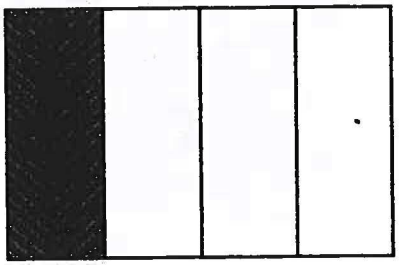
$\frac{\quad}{4}$

B.



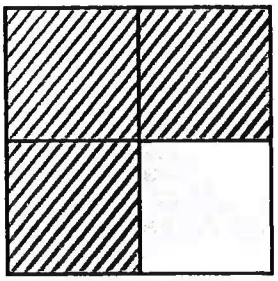
$\frac{\quad}{2}$

C.



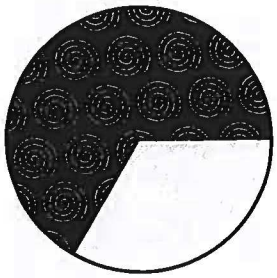
$\frac{\quad}{4}$

D.



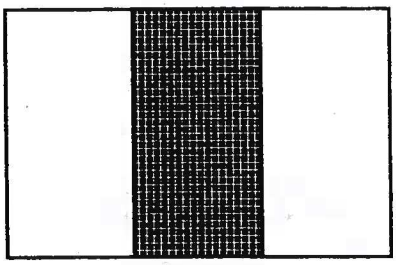
$\frac{\quad}{4}$

E.



$\frac{\quad}{3}$

F.

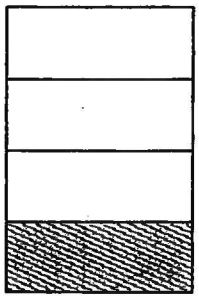


$\frac{\quad}{3}$

Exploring Fractions

There are 4 **parts**, so the bottom number is 4.
One part is shaded.
The answer is $\frac{1}{4}$.

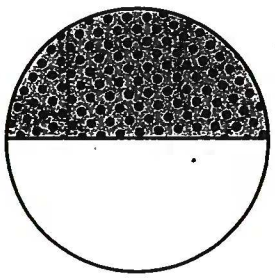
$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



Study the example above. Then, circle the fraction that tells how much is shaded in each shape.

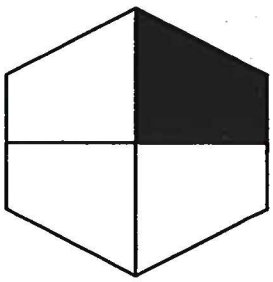
A.

$\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{2}$



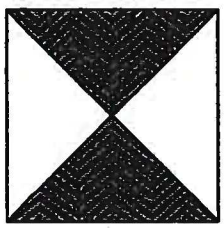
B.

$\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{3}$



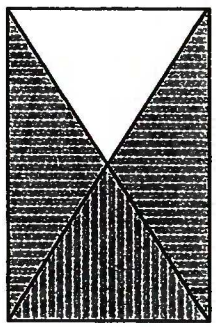
C.

$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$



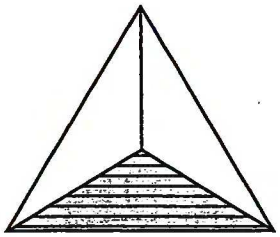
D.

$\frac{3}{4}$ $\frac{2}{4}$ $\frac{1}{4}$



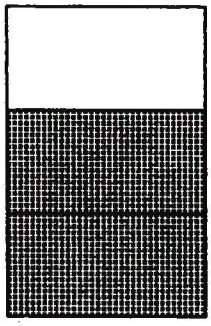
E.

$\frac{2}{3}$ $\frac{1}{3}$ $\frac{1}{2}$



F.

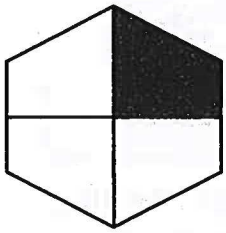
$\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{2}$



How Much Is There?

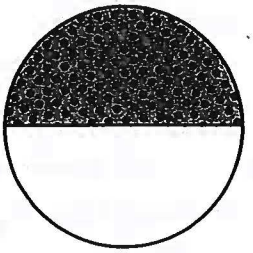
Study the examples on pages 66 and 67. Then, circle the fraction that tells how much of each shape is shaded.

A.



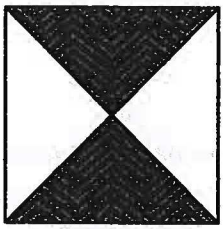
$\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{2}{4}$

B.



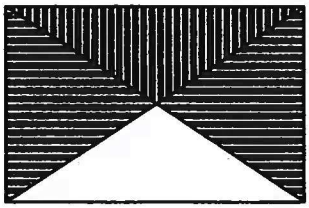
$\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{1}{6}$

C.



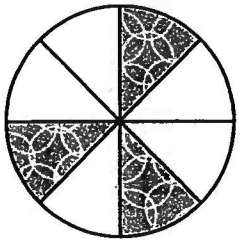
$\frac{2}{4}$ $\frac{3}{4}$ $\frac{1}{8}$ $\frac{1}{4}$

D.



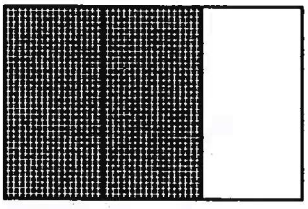
$\frac{4}{4}$ $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$

E.



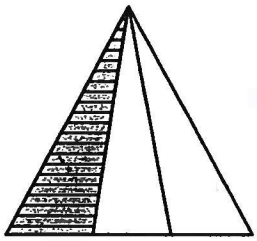
$\frac{3}{8}$ $\frac{5}{8}$ $\frac{1}{4}$ $\frac{5}{9}$

F.



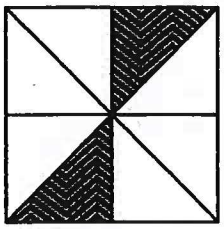
$\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{2}{3}$

G.



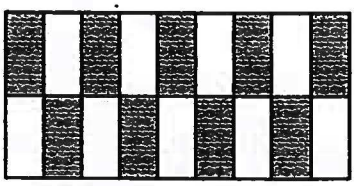
$\frac{1}{3}$ $\frac{2}{3}$ $\frac{3}{3}$ $\frac{2}{12}$

H.



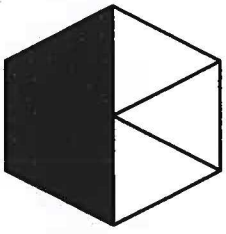
$\frac{2}{3}$ $\frac{6}{8}$ $\frac{2}{8}$ $\frac{1}{5}$

I.



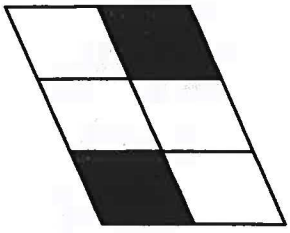
$\frac{6}{18}$ $\frac{9}{18}$ $\frac{10}{18}$ $\frac{9}{14}$

J.



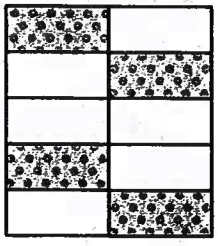
$\frac{2}{6}$ $\frac{6}{10}$ $\frac{1}{6}$ $\frac{3}{6}$

K.



$\frac{2}{6}$ $\frac{1}{6}$ $\frac{4}{6}$ $\frac{1}{2}$

L.



$\frac{5}{10}$ $\frac{6}{8}$ $\frac{4}{10}$ $\frac{4}{12}$

ootball Fractions

A fraction describes part of a group.

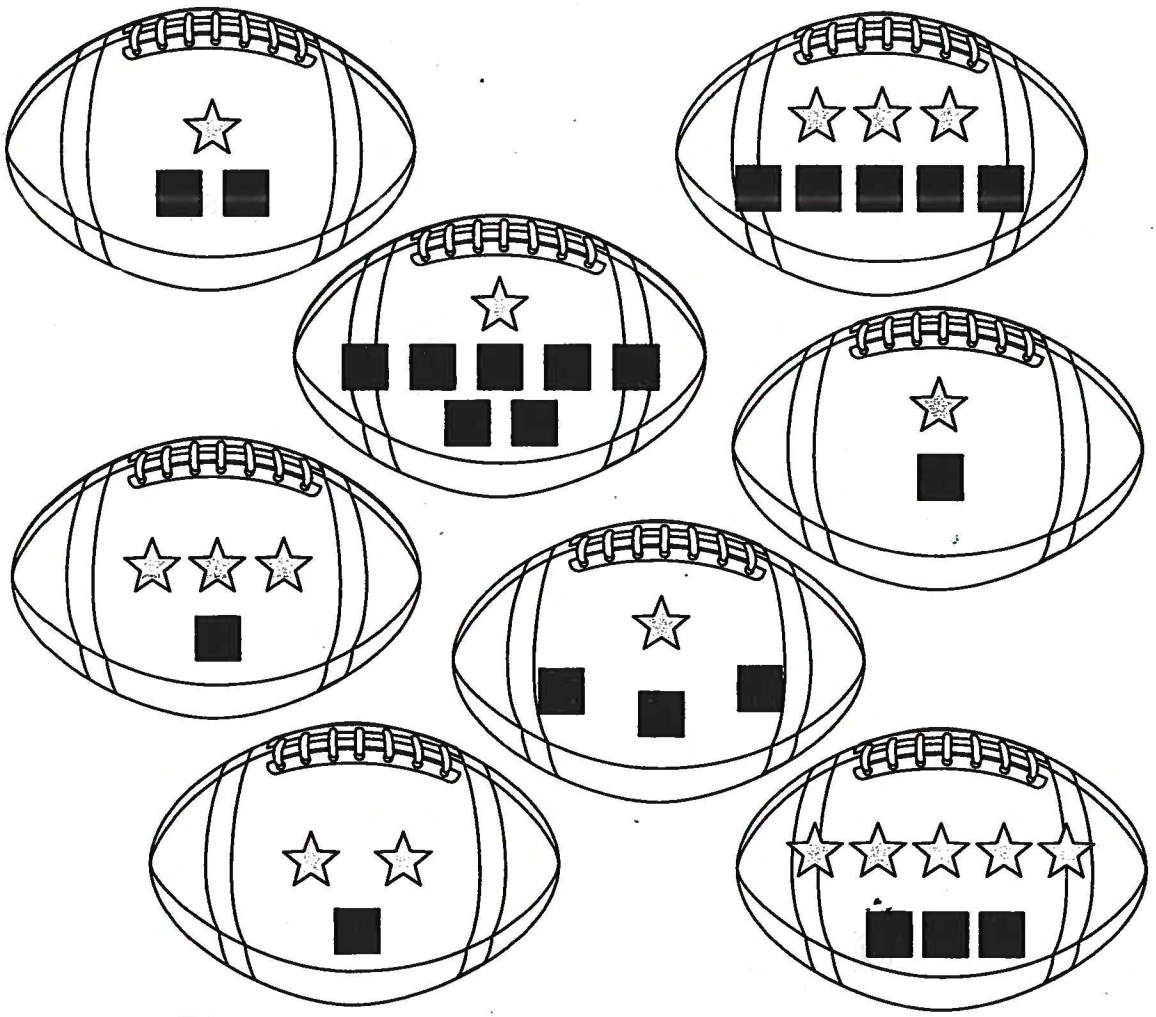
number of stars ⟶ $\frac{5}{8}$

total number of shapes in group ⟶ $\frac{5}{8}$

udy the example above. Then, compare the number of stars to the tal number of shapes on each football. Color the footballs using e code.

$\frac{1}{2}$ = brown $\frac{2}{3}$ = green $\frac{3}{4}$ = purple $\frac{3}{8}$ = blue

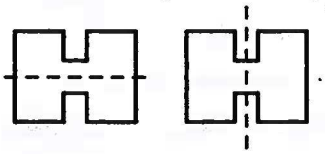
$\frac{1}{3}$ = yellow $\frac{1}{4}$ = red $\frac{1}{8}$ = orange $\frac{5}{8}$ = black



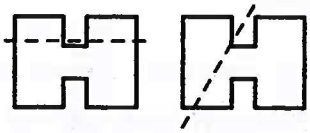
Lines of Symmetry

Imagine folding or drawing a line on each shape so that both sides are identical. The fold or line is called the **line of symmetry**. Some shapes have more than one line of symmetry.

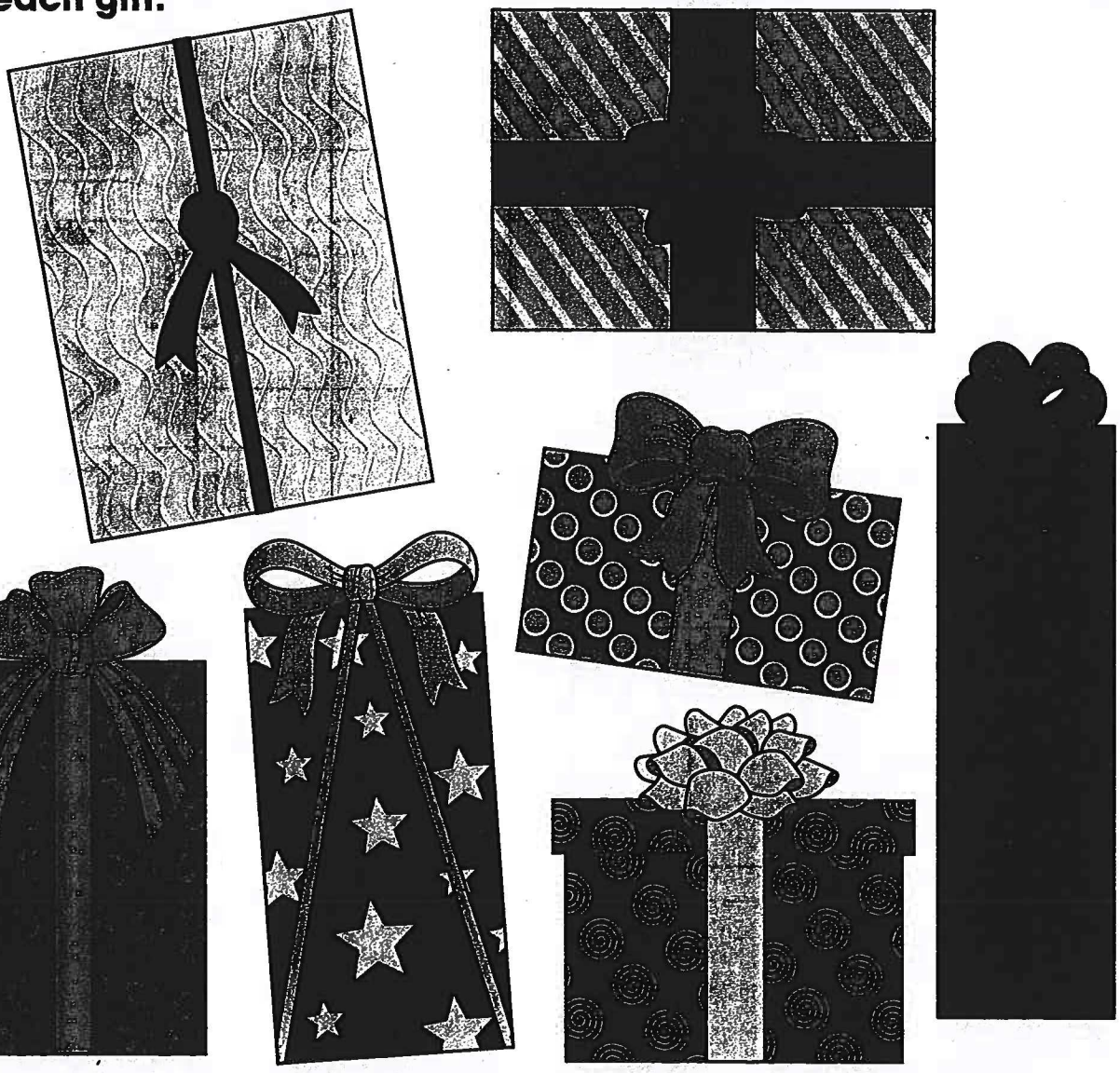
Lines of symmetry:



Not lines of symmetry:

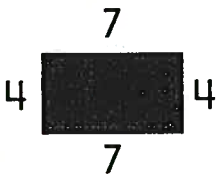


Study the examples above. Then, draw all of the lines of symmetry for each gift.



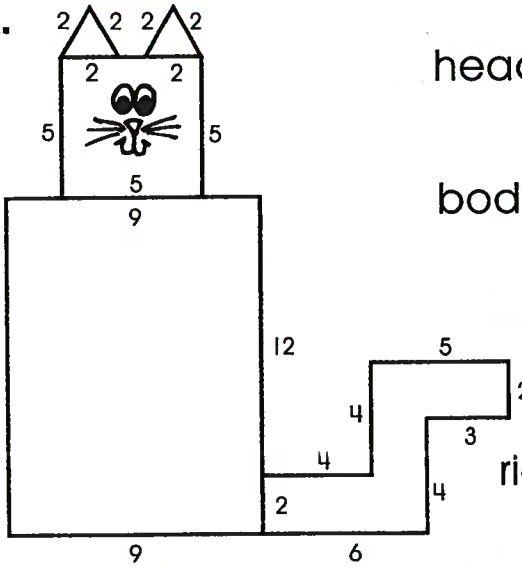
The **perimeter** of an object is the total length of all of the object's sides. Measure each side of the object. Then, add all of the measurements together.

$7 + 7 + 4 + 4 = 22$ units



tudy the example above. Then, find the perimeter of each object.

A.



head = ____ + ____ + ____ + ____ = ☐ units

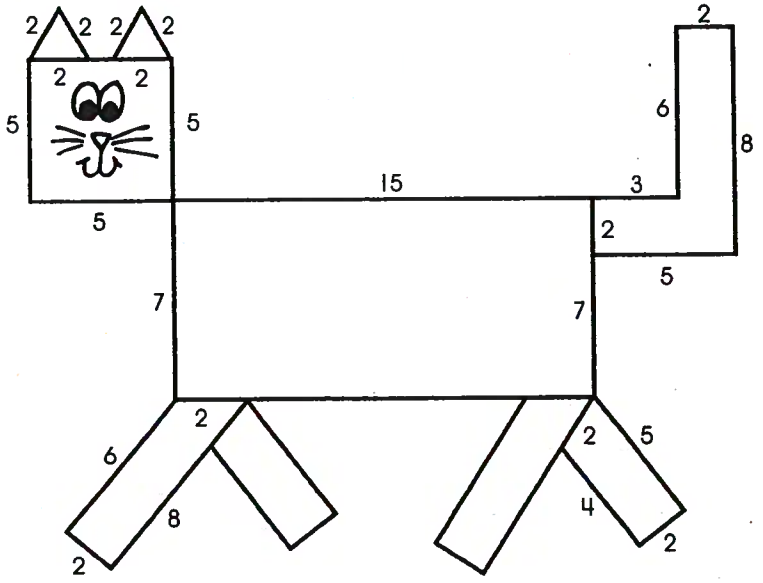
body = ____ + ____ + ____ + ____ = ☐ units

left ear = ____ + ____ + ____ = ☐ units

right ear = ____ + ____ + ____ = ☐ units

tail = ____ + ____ + ____ + ____ + ____ + ____ + ____ + ____ = ☐ units

B.



head = ☐ units

ears = ☐ units

body = ☐ units

tail = ☐ units

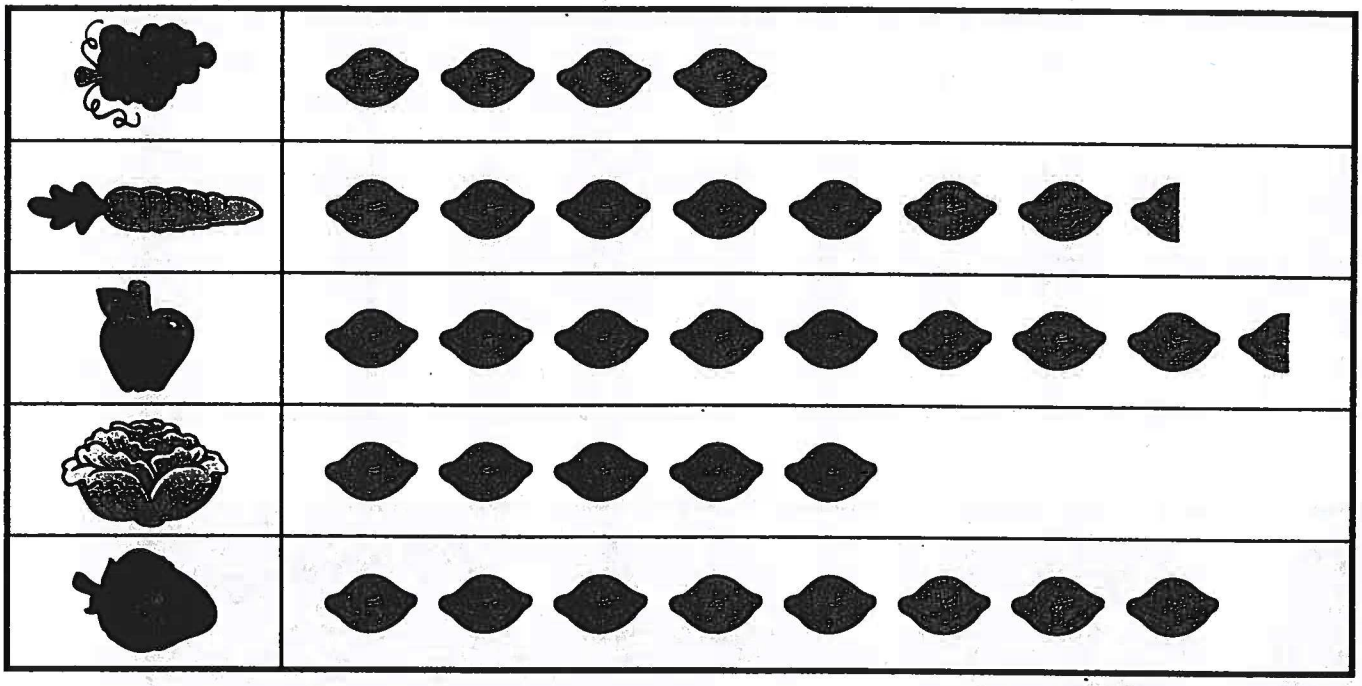
front leg = ☐ units

back leg = ☐ units

Picture Graphs

A **picture graph** is a way to record information. Picture graphs use keys to tell what each picture means. In the graph below, 1 seed picture represents 2 seeds.

Use the picture graph to answer the questions.



= 2 seeds

A. How many grape seeds are there? _____

B. How many carrot seeds are there? _____

C. Which plant has 17 seeds? _____

D. How many more apple seeds are there than lettuce seeds? _____

E. How many strawberry and apple seeds are there? _____

F. Which plant has the fewest seeds? _____

G. How many more carrot seeds than grape seeds are there? _____

H. How many apple and carrot seeds are there in all? _____

Tables

Information can be gathered from a **table** like the one below. This table shows the number of men in each of the two kings' courts.

Use the data from the table to answer the questions.

	Knights	Dukes	Guards	Counts	Jesters
King Ludwig	11	9	42	16	12
King Jonas	8	7	21	13	26

A. How many knights and dukes does King Jonas have? _____

B. How many more guards does King Ludwig have than King Jonas? _____

C. How many guards and jesters does King Ludwig have? _____

D. Who has 28 dukes and guards combined? _____

E. Which king has less counts and jesters combined? _____

F. Who has the fewest knights? _____

Subtraction

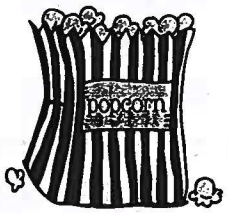
problem solving

There are some key words that tell you to subtract when solving story problems. They are **have left, how many more, how many fewer, how much change**, and **difference**.

Study the example on page 87. Then, use the prices for the snacks below to write each subtraction problem. Find the answer.

$2.38

$1.29



$1.38

$1.34

A. Mr. Smith bought a hot dog during the play. He paid with $3.00. How much change will he get?

B. How much more does popcorn cost than soda?

C. The class sold 26 sodas and 14 cupcakes. How many fewer cupcakes did they sell?

D. Ms. Green bought 10 sodas and 3 hot dogs. How many more sodas did she buy?

E. What is the difference in price between a hot dog and a soda?

F. Erin bought a soda. She paid with $1.50. How much change will she get?

G. How much more does a cupcake cost than a soda?

H. The class sold 42 bags of popcorn and 18 hot dogs. How many more bags of popcorn did they sell?

Determining Necessary Information

problem solving

Sometimes, problem solving can be difficult because a story tells you information that you do not need. Do not let unneeded information fool you! Try this:

1. Read the story and the question.
2. Circle the numbers in the story that you need.
3. Cross out the numbers you do not need so that they will not confuse you!
4. Answer the question. Label the answer.

Study the steps above. Then, solve each problem.

A. Ms. Jackson has 5 poodles, 6 boxers, and 4 cats. How many dogs does she have in all?

B. Mr. Black has 8 black labs, 4 terriers, and 3 poodles. How many more black labs than terriers does he have?

C. Mr. Zucker has 14 terriers. Eight are boys, and 6 are girls. How many more boys than girls are there?

D. Ms. Nimm has 5 black labs, 8 yellow labs, and 3 boxers. How many labs does she have combined?

E. Mr. Kelly has raised beagles for 18 years. He has 12 adults and 28 puppies. How many beagles does he have total?

F. Ms. Miller has 4 dogs. The oldest is 15 years old and the youngest is 3 years old. What is the difference in their ages?

G. Ms. Lee has 3 dogs. They weigh 14 pounds, 11 pounds, and 37 pounds. How much do they weigh combined?

H. Mr. Larry has a kennel. It holds 91 dogs. He has 68 dogs now. Fourteen dogs are black labs. How many spaces does he have left?

Choosing the Operation

problem solving

Use these steps to help you solve problems:

1. Read the story and the question.
2. Circle the numbers in the story that you need.
3. Cross out the numbers you do not need so that they will not confuse you!
4. Watch for key words. Choose to add, subtract, multiply or divide.
5. Answer the question.

Study the steps above. Then, solve each problem.

A. My family drove 453 miles on vacation. We crossed 4 states. We stopped 2 times in each state. How many times did we stop?

B. We went to an amusement park. There were 4 roller coasters. We rode each one 3 times. How many times did we ride roller coasters?

C. We hiked 12 miles on Monday. We rode our bikes 23 miles on Tuesday and 31 miles on Wednesday. How far did we ride bikes altogether?

D. We read books while traveling. My sister read 473 pages, and my mom read 394 pages. How many more pages did my sister read than my mom?

E. We stopped at 2 aquariums. There were 356 sharks at one and 358 sharks at the other. How many sharks did we see in all?

F. I wrote about our trip in my journal. I wrote 64 words the first day and 49 words the last day. How many more words did I write on the first day?

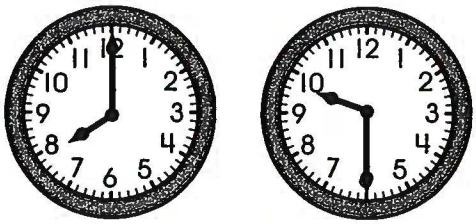
Elapsed Time

problem solving

To find passed time, picture a clock in your mind. Imagine the clock showing the beginning time and the end time. How has the clock changed?

The show started at 8:00.
It ended at 9:30.
How long did the show last?

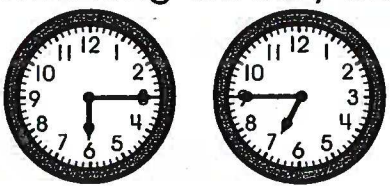
The minute hand has moved 30 minutes. The hour hand has moved 1 hour. The show lasted 1 hour and 30 minutes.



Start End

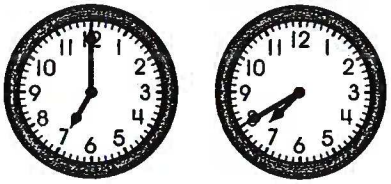
Study the example above. Then, answer the questions.

A. The dancing dogs started at 6:15. They danced until 6:45. How long did they dance?



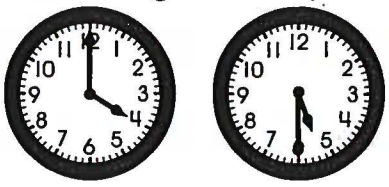
_____

B. The clowns started at 7:00. They rode bikes for 40 minutes. What time did they end?



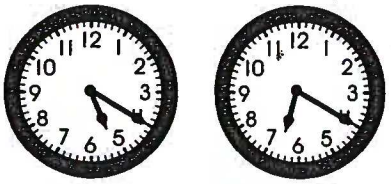
_____

C. The lion tamer started at 4:00. He was on stage until 5:30. How long did he perform?



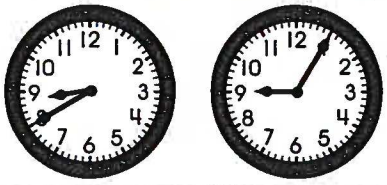
_____

D. The elephants came on at 5:20. They performed for 1 hour. What time did they finish?



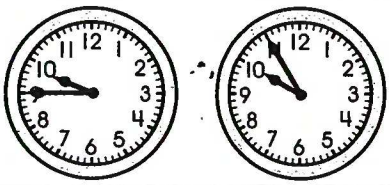
_____

E. The tightrope walker began at 8:40. She finished at 9:05. How long was she walking?



_____

F. The human rocket came on stage at 9:45. He shot off 10 minutes later. What time did he leave?



_____

Date _____ Name _____

Just the Facts 7

STOP Don't start yet! Star two problems that may have even answers.

1. $7 - 4 =$ _____ **2.** $10 - 6 =$ _____

3. $11 - 3 =$ _____ **4.** $14 - 7 =$ _____

5. $3 +$ _____ $= 10$

6. $10 - 3 =$ _____

7. $\begin{array}{r} 10 \\ -\ 5 \\ \hline \end{array}$ **8.** $\begin{array}{r} 12 \\ -\ 4 \\ \hline \end{array}$ **9.** $\begin{array}{r} 15 \\ -\ 8 \\ \hline \end{array}$ **10.** $\begin{array}{r} 16 \\ -\ 9 \\ \hline \end{array}$

Go On What number is missing? 12, 10, 8, _____, 4, 2

Date _____ Name _____

Just the Facts 8

STOP Don't start yet! Star two problems that may have an answer less than 7.

1. $6 - 3 =$ _____ **2.** $9 - 5 =$ _____

3. $12 - 4 =$ _____ **4.** $13 - 6 =$ _____

5. $6 +$ _____ $= 10$

6. $10 - 6 =$ _____

7. $\begin{array}{r} 10 \\ -\ 2 \\ \hline \end{array}$ **8.** $\begin{array}{r} 12 \\ -\ 6 \\ \hline \end{array}$ **9.** $\begin{array}{r} 14 \\ -\ 6 \\ \hline \end{array}$ **10.** $\begin{array}{r} 16 \\ -\ 8 \\ \hline \end{array}$

Go On If $\triangle + \square = 10$ and $\triangle - \square = 2$.

$\triangle =$ _____ $\square =$ _____

Date _____ Name _____

Just the Facts 9

STOP Don't start yet! Star two problems that may have odd answers.

1. $5 - 2 =$ _____ **2.** $10 - 7 =$ _____

3. $11 - 6 =$ _____ **4.** $15 - 9 =$ _____

5. $5 +$ _____ $= 9$

6. $9 - 5 =$ _____

7.	**8.**	**9.**	**10.**
9	11	16	15
-7	-2	-7	-6
___	___	___	___

Go On What number is missing? 20, 15, _____, 5

Date _____ Name _____

Just the Facts 10

STOP Don't start yet! Star the problem in Row 1 that may have the smaller answer.

1. $5 - 4 =$ _____ **2.** $10 - 8 =$ _____

3. $12 - 5 =$ _____ **4.** $15 - 7 =$ _____

5. $9 +$ _____ $= 12$

6. $12 - 9 =$ _____

7.	**8.**	**9.**	**10.**
9	11	18	14
-6	-7	-9	-7
___	___	___	___

Go On If $\triangle + \square = 12$ and $\triangle - \square = 4$

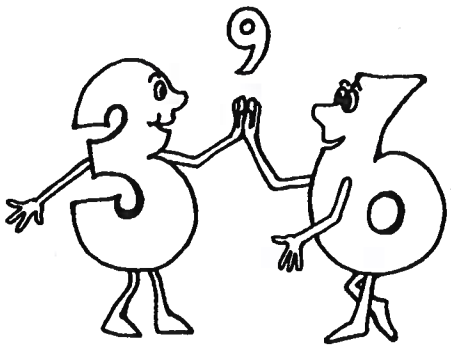
$\square =$ _____ $\triangle =$ _____

Date _____ Name _____

Joining Neighbors II

Use the numbers that are next to each other to make the sums shown.

8	4	6	3	2	3	
11	4	2	5	3	4	
13	5	3	6	7	4	
10	3	4	2	4	5	
12	4	2	5	3	2	
12	6	5	4	3	6	1
10	2	3	4	2	1	4
13	4	2	3	4	3	5
12	5	3	2	4	1	5
13	3	4	4	3	2	5



Date _____ Name _____

Joining Numbers III

Use the numbers that are next to each other to make the sums shown.

(12) 5 4 6 3 3

(15) 6 3 4 8 5

(11) 7 2 5 2 4

(13) 5 3 5 4 6

(16) 6 4 3 5 4 3

(17) 7 3 4 5 2 3

(17) 4 6 3 4 2 5

(18) 7 4 5 6 3 6

(14) 4 6 3 5 4

(13) 6 3 5 1 4

(15) 5 3 4 3 6

(18) 7 5 4 7 7

Seeking Sums

Topic: Addition Facts

Object: Equal the target sums.

Groups: Pairs

Tip *For children ready for a greater challenge, use digits 1 through 9.*

Materials for each group

- Digit Cards 1–6, p. 148
- *Seeking Sums* gameboard, p. 22
- 18 markers

Directions

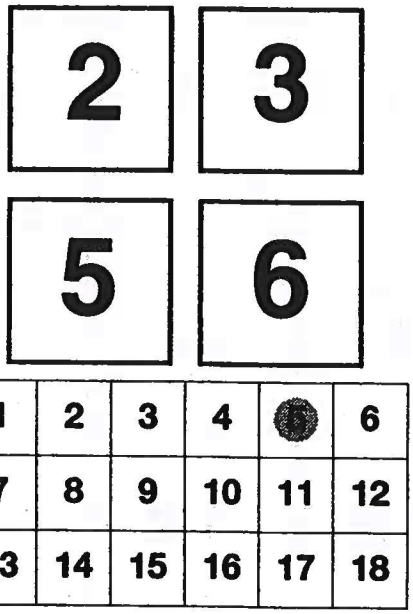
1. A pair draws four Digit Cards and displays them at the top of their *Seeking Sums* gameboard.
2. The two children collaborate while taking turns using any of the four displayed numbers to make the sums 1 through 18. When a child identifies a way to show a sum, he or she covers that sum with a marker.

   Example: If 2, 3, 5, and 6 are displayed, 5 could be made two different ways (combining 2 and 3 or with the 5 card alone).
3. The pair continues until agreeing that no other sums can be made.
4. If time allows, clear the gameboard, mix the six Digit Cards, and begin another round.

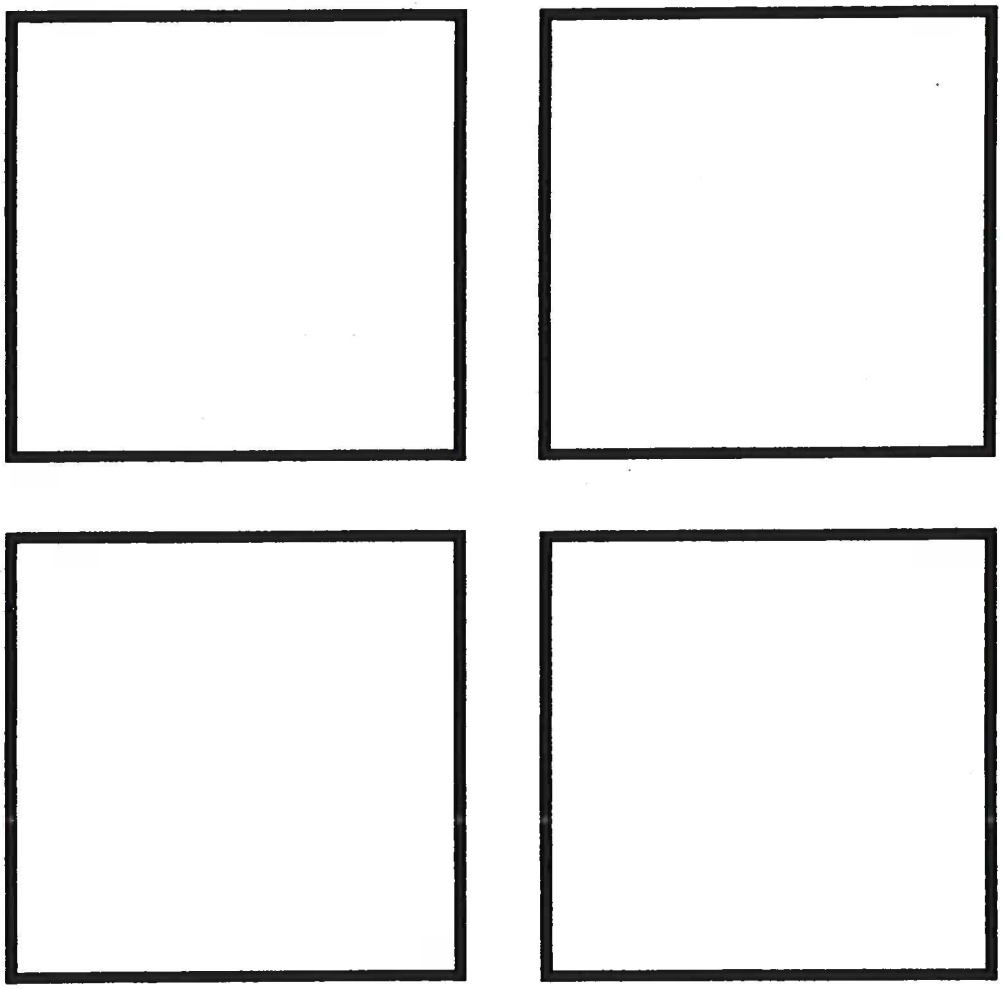
Making Connections

Promote reflection and make mathematical connections by asking:

- Which sums were not possible? Why?
- Which sums could be made more than one way?



Seeking Sums



1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18

Uncover

Topic: Addition Facts

Object: Uncover the most numbers.

Groups: Pair players or 2 players

Materials for each group

- *Uncover* gameboard, p. 24
- 2 Number Cubes (1–6), p. 151
- 24 transparent markers

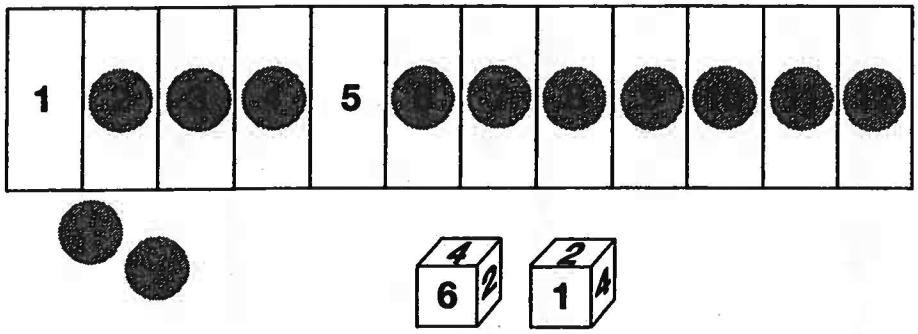
Tip *As children gain confidence, have them determine their scores by totaling the numerical values of the uncovered numbers. Winners have lower scores.*

Directions

1. Using markers, pairs cover every numbered space along their number strips on the gameboard.
2. The first pair rolls the number cubes and adds the numbers on the cubes. The pair can uncover the sum or any combination of addends that equals the rolled sum.

   Example: If 2 and 4 are rolled, the pair can uncover 6 or any combination that makes 6 (1 + 5, 1 + 2 + 3, or 2 + 4).

3. Pairs alternate turns, rolling number cubes and uncovering sums or addends on their number strips.
4. When a pair can no longer use the covered numbers to make a sum or combination, play stops for that pair. When neither pair can uncover any more numbers, the game ends.
5. The pair who uncovers the most numbers wins.



Making Connections

Promote reflection and make mathematical connections by asking:

- Which sums did you prefer to roll? Why?
- What strategies helped you uncover more markers?

Uncover

1	2	3	4	5	6	7	8	9	10	11	12

12	11	10	9	8	7	6	5	4	3	2	1

Four Sums-in-a-Row

Topic: Addition Facts

Object: Cover four numbers in a row.

Groups: 2 pair players

Materials for each group

- *Four Sums-in-a-Row A* gameboard, p. 26
- 2 paper clips
- different markers for each pair

Tips For players feeling insecure with the facts, allow three in a row to win. Use Gameboard B to practice sums through 18.

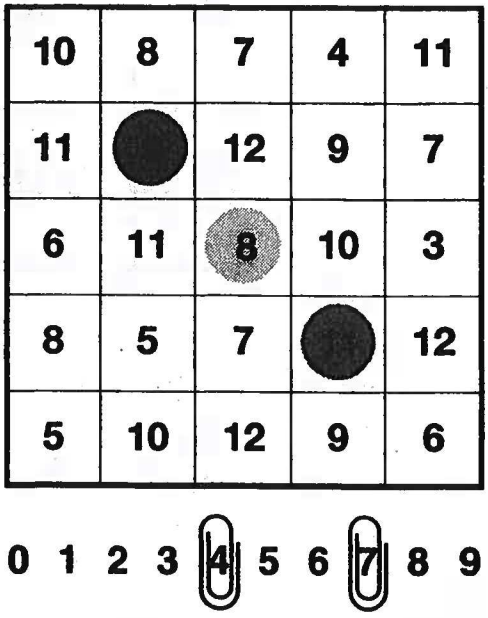
Directions

1. The first pair places two paper clips at the bottom of the gameboard, indicating two addends, adds the two numbers, and places a marker on the resulting sum.
2. The other pair moves *only one* of the paper clips to a new addend, adds the two indicated numbers, and places a marker on that sum. (It is permissible to have two paper clips on the same addend.)
3. Play continues with pairs alternating turns, moving one paper clip each time, adding the numbers, stating the fact, and placing markers on the gameboard.
4. The first pair to have four markers in a row horizontally, vertically, or diagonally wins.

Making Connections

Promote reflection and make mathematical connections by asking:

- Was it difficult to block your opponent? Why or why not?
- What strategies helped you line up your markers in a row?



Four Sums-in-a-Row A

10	8	7	4	11
11	9	12	9	7
6	11	8	10	3
8	5	7	9	12
5	10	12	10	6

0 1 2 3 4 5 6 7 8 9

Date _____ Name _____

Just the Facts 11

STOP Don't start yet! Star the problem in Row 2 that may have an even answer.

1. $8 - 3 =$ _____ **2.** $9 - 1 =$ _____

3. $12 - 9 =$ _____ **4.** $13 - 7 =$ _____

5. $6 +$ _____ $= 9$

6. $9 - 6 =$ _____

7.	**8.**	**9.**	**10.**
10	11	17	13
-2	-5	-8	-5
___	___	___	___

Go On What number is missing? 18, 14, 10, _____, 2

Date _____ Name _____

Just the Facts 12

STOP Don't start yet! Star the problems that may answers greater than 6.

1. $8 - 4 =$ _____ **2.** $9 - 3 =$ _____

3. $12 - 7 =$ _____ **4.** $13 - 9 =$ _____

5. $3 +$ _____ $= 11$

6. $11 - 3 =$ _____

7.	**8.**	**9.**	**10.**
9	11	16	14
-2	-3	-9	-5
___	___	___	___

Go On If $\triangle + \square = 9$ and $\triangle - \square = 3$.

$\triangle =$ _____ $\square =$ _____

Making Equations

Topic: Subtraction and Addition Facts

Object: Make equations to equal 1 through 6.

Groups: Pairs

Materials for each pair

- *Making Equations* recording sheet, p. 45
- Digit Squares (digits 0–6 only), p. 149

Tip *Eventually children could have their own recording sheets and alternate turns to see who can complete a recording sheet in the fewest turns.*

Directions

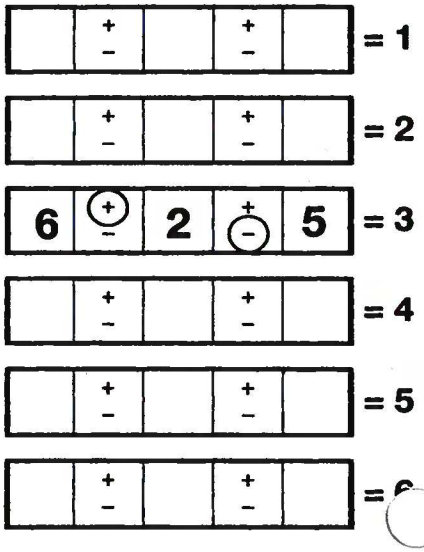
1. Each pair collaborates to complete one recording sheet.
2. Each pair randomly places the Digit Squares 0–6 facedown. The pair selects and displays four of the Digit Squares.
3. Each pair uses three of the four displayed digits to form an equation. If the equation equals an amount shown on the recording sheet, the pair records the solution. If the equation equals an amount not shown, the pair rearranges the digits or selects a different combination of three Digit Squares until they find an equation that will fit.
4. Each pair repeats these steps until it has completed equations for each of the six amounts shown on the recording sheet.

   Option: When pairs gain confidence with this activity, suggest pair members alternate turns to complete the recording sheet.

Making Connections

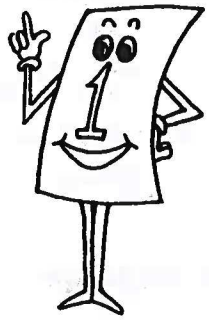
Promote reflection and make mathematical connections by asking:

- Which solutions were not possible?
- What type of numbers do you need to make an even answer?



Making Equations

	+ −		+ −		= 1
	+ −		+ −		= 2
	+ −		+ −		= 3
	+ −		+ −		= 4
	+ −		+ −		= 5
	+ −		+ −		= 6



How Many More?

Topic: Subtraction Facts

Object: Cover three numbers in a row.

Groups: Pair players or 2 players

Materials for each group

- *How Many More to Make 10?* gameboard, p. 47
- markers (different kind for each pair)
- Number Cube (1–6), p. 151
- paper for recording equations

Tip As an easy replacement for number cubes, consider using the 1–6 Digit Cards or Dot Pattern Cards randomly mixed and stacked facedown. Gameboards A and B will require the 4–9 Digit Cards or Digit Squares.

Directions

1. The first pair rolls the number cube and decides how many more are needed to make 10. Pair places a marker on a gameboard number that represents the missing amount.

   Example: If 3 is rolled, 7 is needed to make 10. The pair covers one of the 7s on the gameboard.

2. Pairs are required to say aloud and record the related subtraction fact for each turn on a separate sheet of paper.

   Example: If 3 is rolled, a pair records 10 – 3 = 7.

3. Pairs alternate turns and follow this procedure until one pair wins by placing three markers in a row horizontally, vertically, or diagonally.

   Option: To provide practice with more difficult facts, select *Gameboard A* or *Gameboard B*, both of which are designed to be used with the 4–9 number cube (or spinner). *Gameboard A* works well with subtraction facts 13 through 15, while *Gameboard B* is designed for subtraction facts 16 through 18.

		14		
5	8	4	7	11
7	6	9	8	7
11	9	8	6	9
6	7	9	8	10
8	5	10	4	6

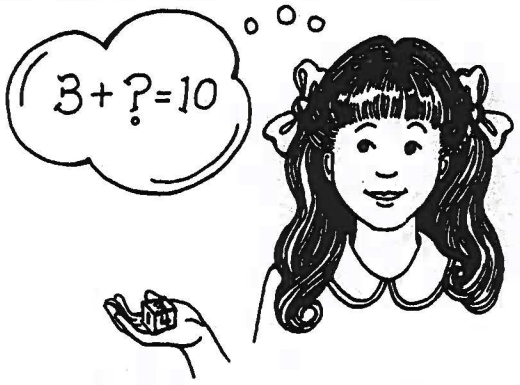
Making Connections

Promote reflection and make mathematical connections by asking:

- What strategies did you use in placing your markers?
- Were some numbers easier to cover than others?
- Was it difficult to block your opponent? Why or why not?

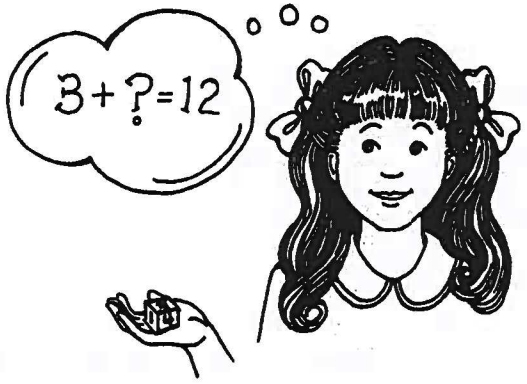
How Many More to Make 10?

4	6	9	7
8	7	5	4
6	4	9	5
7	5	6	8

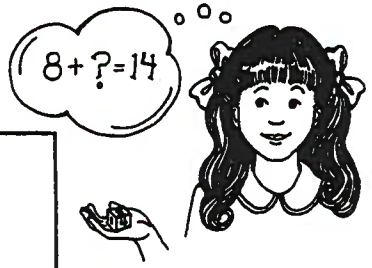


How Many More to Make 12?

8	7	10	7
6	8	9	11
10	9	10	8
7	11	6	9



How Many More? A



5	8	4	7	11
7	6	9	8	7
11	9	8	6	9
6	7	9	8	10
8	5	10	4	6

How Many More? B

14	7	10	8	14
13	10	9	11	12
9	11	12	10	11
12	9	11	12	7
8	11	10	13	9

Neighbors Count

Topic: Subtraction and Addition Facts

Object: Score the highest total.

Groups: Pair players or 2 to 4 players

Materials for each group

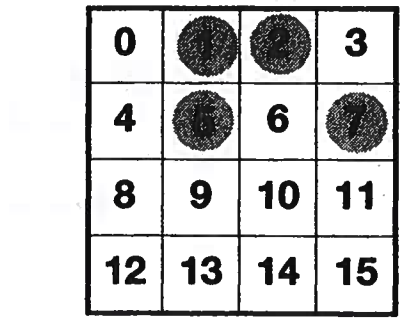
- *Neighbors Count* gameboard, p. 50
- 3 Number Cubes (1–6), p. 151
- markers (8 for each pair)
- paper for keeping score

Tip Students soon discover it's disadvantageous to go first, so you might want to announce how groups should determine order of play.

Directions:

1. The first player or pair rolls three cubes, then adds and/or subtracts the three numbers shown. After the equation is stated, the resulting answer is located and covered with a marker.

   Example: With 1, 2, and 6 you might say "1 + 2 + 6 = 9" and cover 9 on the gameboard. Other possibilities are: "1 + 6 – 2 = 5" and cover 5, or "6 – 2 – 1 = 3" and cover 3.



6 – 2 – 1 = 3

2. The next player rolls the three cubes and uses the three rolled numbers to find a new answer. A point is scored if the player can cover an uncovered number that shares a side with an already covered number.
3. Players continue to follow this process. As more numbers are covered, players earn more points, since one point is scored for each adjacent covered number.

   Example: If 1, 2, 5, and 7 are covered and you are able to make 6, you receive 3 points.

4. Each player keeps a running total, recording a score after each turn. Sometimes a player will be unable to make any uncovered number and must pass for that turn. The game ends after all numbers are covered or after three consecutive passes by one player. The player with the highest cumulative score wins.

Making Connections

Promote reflection and make mathematical connections by asking:

- Which kinds of rolls do you prefer? Please explain.
- What strategies worked best to give you high totals on your turns?

Neighbors Count

0	1	2	3
4	5	6	7
8	9	10	11
12	13	14	15

Race to 50¢

Topic: Exchanging and Adding Pennies, Nickels, Dimes, and Quarters

Object: Reach 50¢.

Groups: 2 players or pair players

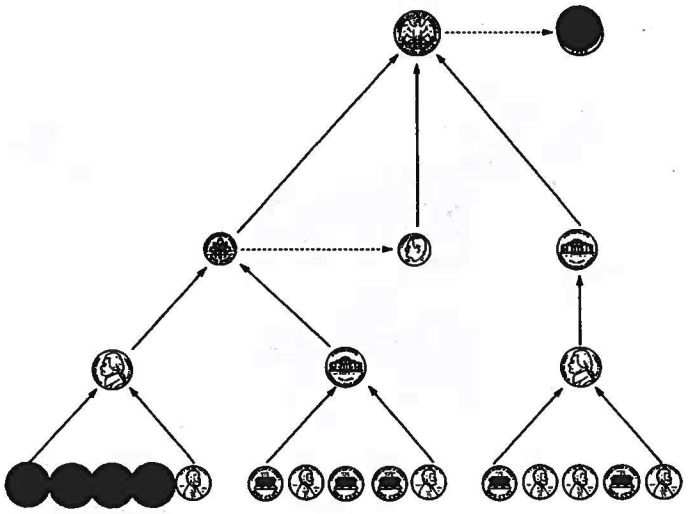
Materials for each group

- *Race to 50¢* gameboard for each player, p. 66
- 2 Number Cubes (1–6), p. 151
- 20 markers
- play coins: pennies, nickels, dimes, and quarters *(optional)*

Tips *Reinforce subtraction and making change by reversing the rules. Begin with 50¢ (two quarters) and "Race to Zero." Some children might find it helpful to record their turns and keep track of their totals.*

Directions

1. The first player rolls two number cubes. The number rolled indicates the number of pennies awarded for that turn. The player covers the rolled amount on his or her gameboard and states the accumulated value. After accumulating 5 pennies, a player must exchange them for a nickel.
2. The second player rolls the number cubes, indicates the value of the roll on his or her gameboard, and states the accumulated value.
3. Players continue to alternate turns and follow the same procedure. Players must exchange coins when appropriate (five pennies for a nickel, two nickels for a dime, two dimes and a nickel for a quarter). After accumulating a quarter, a player places a marker on the quarter; that player is halfway to a winning round. Players win when they have accumulated two quarters. If players have the same number of turns, it is possible both players could win.
4. Since exchanging coins is worthwhile practice, players are encouraged to play additional rounds.

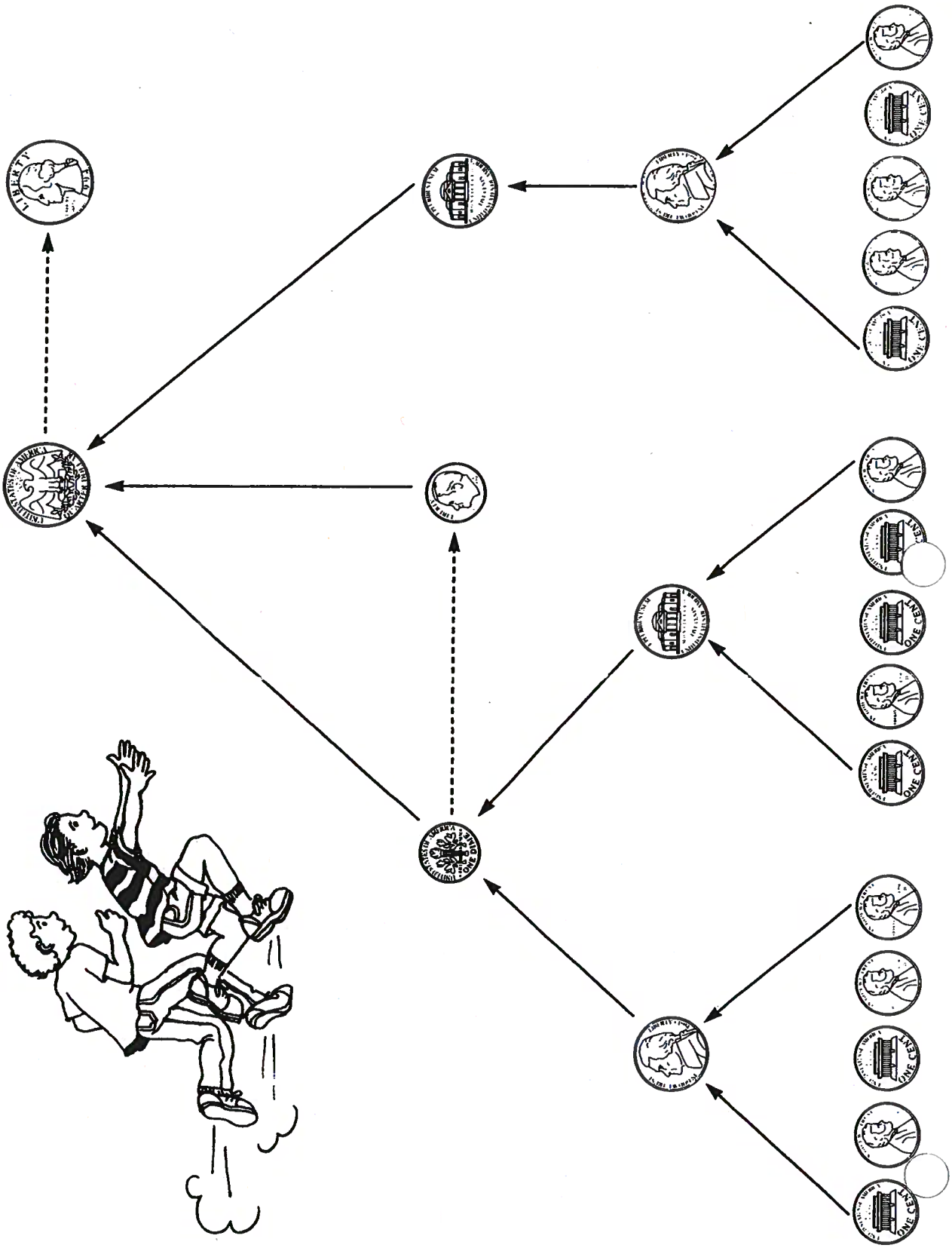


Making Connections

Promote reflection and make mathematical connections by asking:

- If you were to redesign the number cube, how would you change it? Why?

Race to 50¢



Pennies or Nickels?

Topic: Adding Nickels and Pennies

Object: Reach close to 25¢ in three rolls.

Groups: Pair players or 2 players

Materials for each group

- Number Cubes (1–6), p. 151
- play coins: nickels and pennies

Directions

1. The first pair rolls the number cubes. The number rolled indicates how many nickels or pennies the pair takes, not a combination of both coin amounts. The pair decides whether to take pennies or nickels and announces the total amount.

   Example: "We rolled a three. We'll take three nickels. We have 15¢."

2. The second pair rolls and follows the same procedure. When appropriate, pairs may exchange five pennies for a nickel.
3. The first pair rolls again, decides whether nickels or pennies are preferred, takes that number of nickels or pennies, and adds it to the existing amount.

   Example: "We had 15¢. We rolled a six. We'll take six pennies. 15¢ plus 6¢ equals 21¢. We now have 21¢."

4. Pairs alternate turns until each pair has rolled three times. After three rolls, each pair totals its coins. The pair closest to 25¢ wins.

   Example: First pair: "We have 22¢. We are 3 away from 25¢."

   Second pair: "We have 27¢. We are 2 away from 25¢. We win."

Making Connections

Promote reflection and make mathematical connections by asking:

- How did you decide whether to take pennies or nickels on each turn?
- How would you play differently in future games?

Tips *Increase the difficulty of this game by allowing more rolls and a greater target amount. "Roll the number cubes six times and try for an amount close to 50¢." Students can also vary the value of coins selected by using dimes and pennies or dimes and nickels.*

Who Buys?

Topic: Mental Addition of Coins

Object: Add coins to total a specified amount.

Groups: Pair players or 2 players

Materials for each group

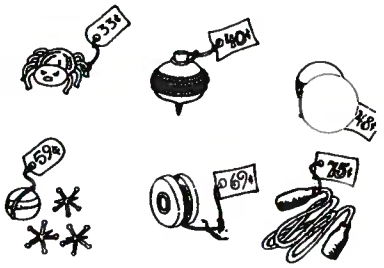
- *Who Buys?* gameboard, p. 69
- 16 markers
- play coins: pennies, nickels, dimes, and quarters *(optional)*

Tip Encourage children to play additional rounds seeking the same specified amount to see patterns and discover winning strategies. Less-experienced children might benefit from using price tags with prices in multiples of 5 cents.

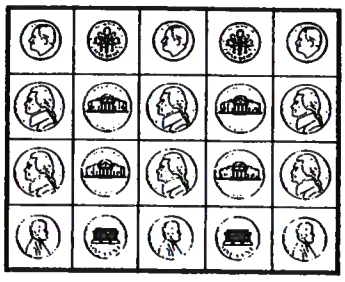
Directions

1. Leader designates which item is to be purchased (target amount). Pairs place a marker on the indicated item.
2. The first pair places a marker on one of the coins and states the amount.
3. Pairs alternate turns by placing one marker on any uncovered coin and stating the new total.

   Example: If a dime and nickel are covered, the current total is 15 cents. If the next pair covers a nickel, the pair states "20 cents" as the new total.



4. The first pair to reach and state the purchase price exactly wins. If a pair goes over the target amount, the other pair wins that round.
5. Additional rounds can be played to purchase the same item, or a new item can be designated at the beginning of the game.

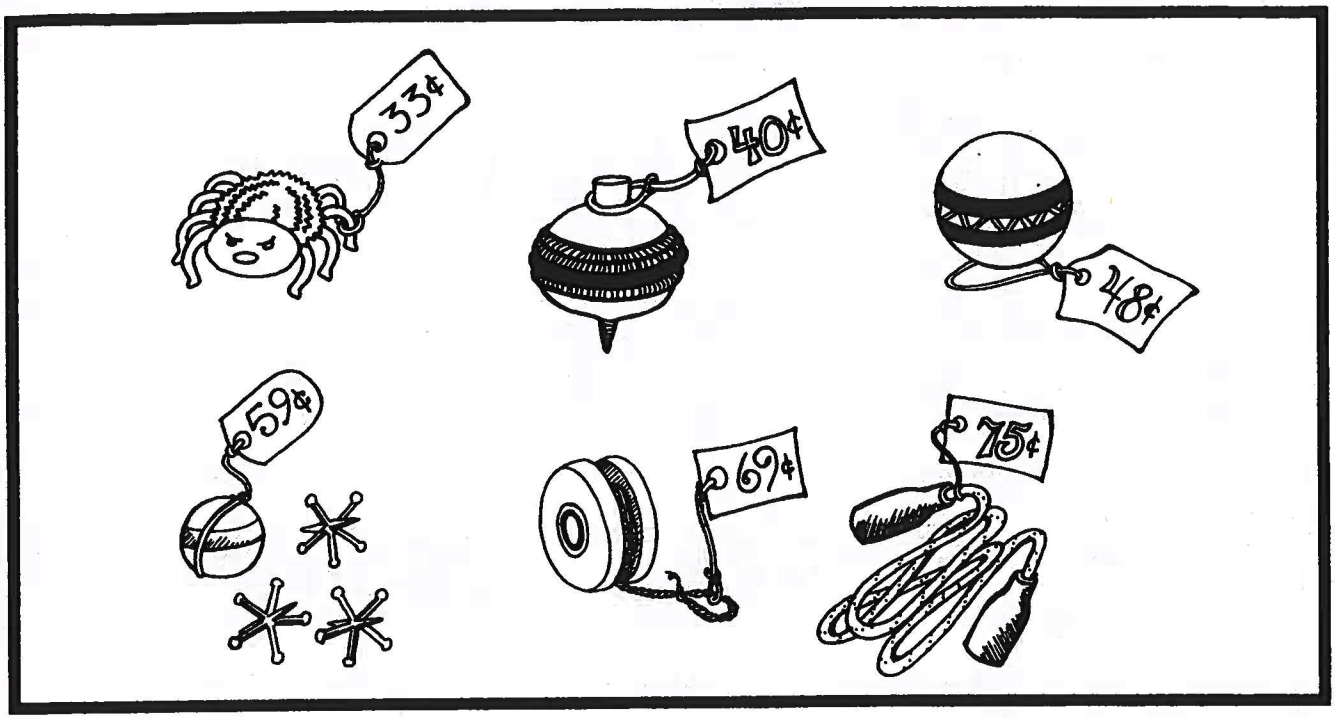


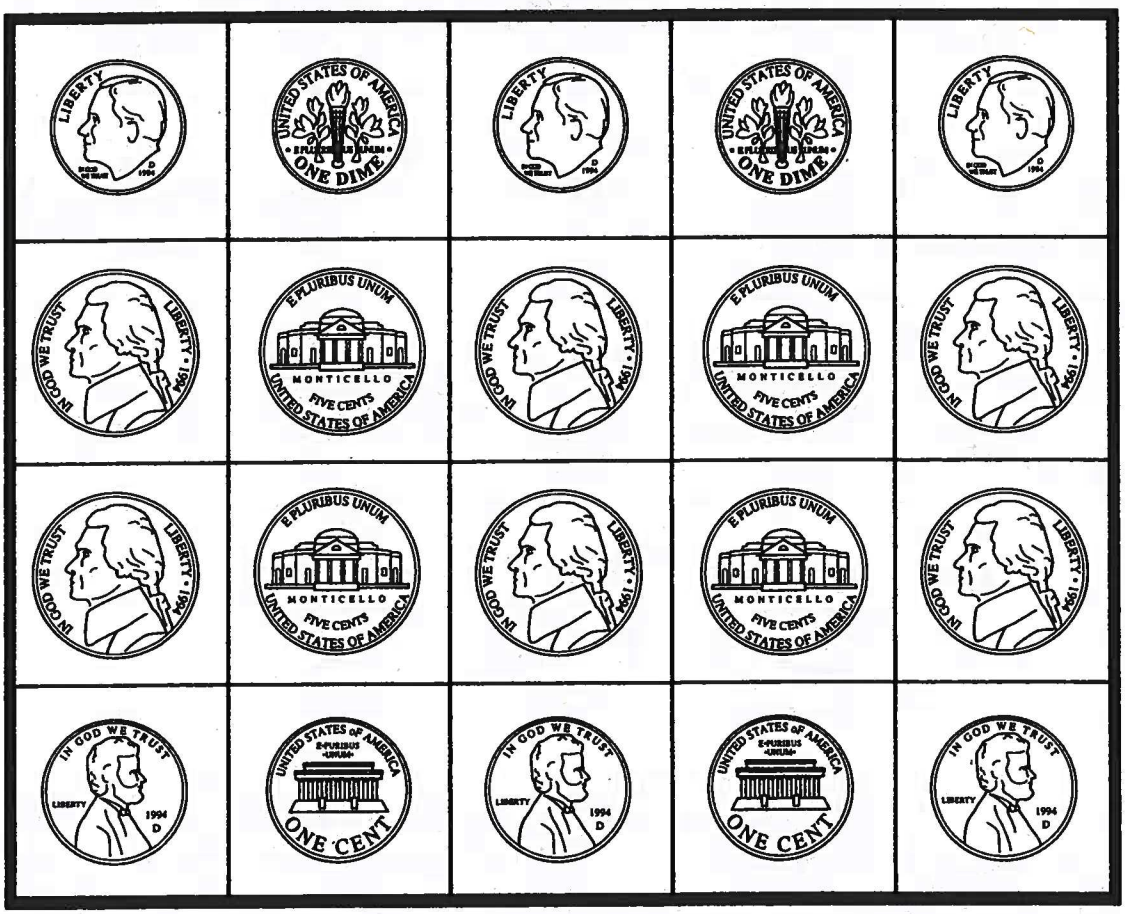
Making Connections

Promote reflection and make mathematical connections by asking:

- What strategy helped you get close to the purchase amount?

Who Buys?

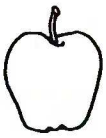

33¢
40¢
48¢
59¢
69¢
75¢


LIBERTY
UNITED STATES OF AMERICA
ONE DIME
IN GOD WE TRUST
E PLURIBUS UNUM
MONTICELLO
FIVE CENTS
ONE CENT
1994
D

Date _____ Name _____

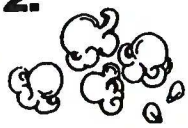
Buying Snacks

Mark the coins you need to buy each item.

1. 

45¢

apple

2. 

70¢

popcorn

3. 

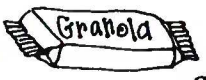
42¢

raisins

4. 

35¢

crackers

5. 

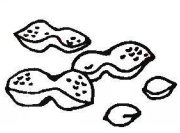
51¢

granola bar

6. 

60¢

fruit roll

7. 

85¢

nuts

8. 

38¢

beef jerky

Where Will It Fit?

Topic: Place Value

Object: Put three numbers in a row, following the correct number sequence.

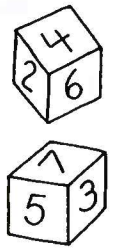
Groups: Whole class or small group

Materials

- transparency of *Where Will It Fit?* recording form, p. 80
- 2 overhead pens (different colors)
- Number Cube (1–6), p. 151
- special Number Cube (3–8), p. 151
- 100 Chart, p. 146 *(optional)*

Tip Some children appreciate the use of the 100 chart, p. 146, to help determine placement of selected numbers.

11					29
30			47		49
50					69
70					87



Directions

1. Explore with children which numbers are possible if the number cube and the special number cube (3–8) are rolled and used as digits for two-digit numbers. Ask, "Which two-digit numbers between 10 and 40 are *not* possible?"
2. Divide the group into two teams. Explain the object of the game, emphasizing the importance of placing the numbers in the correct row and ordering each row of numbers from smallest to largest.
3. A player on the first team rolls two cubes and announces the possible two-digit numbers. The team decides which number to use and tells the leader where to record the number. The leader records the selected number in the team's color.

   Example: If 4 and 7 are rolled, the team can select and appropriately record 47 in the second row or record 74 in the fourth row.

4. The other team takes a turn as explained in step 3.
5. Teams alternate turns until one team records three of its numbers in a row, horizontally, vertically, or diagonally. When a team's roll produces numbers that cannot be placed, that team passes.

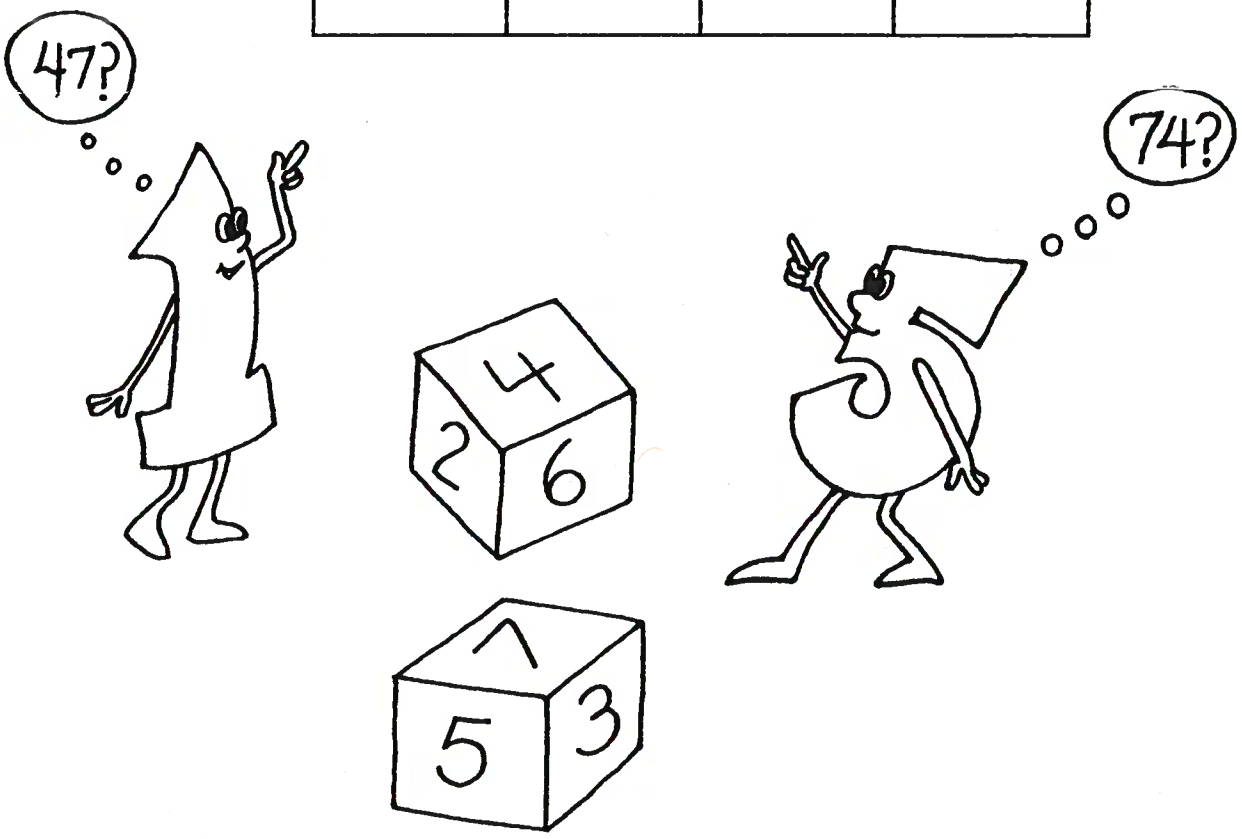
Making Connections

Promote reflection and make mathematical connections by asking:

- What did you try that didn't work?
- What strategies helped you line up numbers next to each other?

Where Will It Fit?

11					29
30					49
50					69
70					87



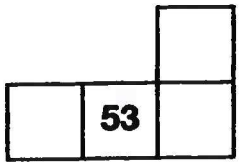
Date _____ Name _____

What's in That Place? 5

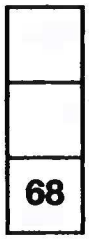
STOP Don't start yet! Star two problems that may have answers greater than 50.

Fill in the missing numbers from the 100 Chart:

1.



2.



3. Order these numbers from smallest to largest: 52, 25, 18 _____

4. fifteen _____ **5.** eighty-two _____ **6.** 2 tens less than 74 _____

Use two of the digits 4, 8, and 9 to form:

7. odd number between 80 and 90 _____ **8.** number greater than 95 _____

9. even number less than 60 _____ **10.** even number between 80 and 90 _____

Go On Which is closest to 53? 51, 42, 54, 57_____ Explain your answer.

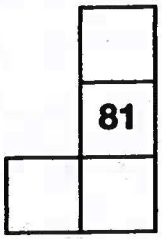
Date _____ Name _____

What's in That Place? 6

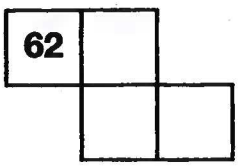
STOP Don't start yet! Star the problem in Row 3 that may have the largest answer.

Fill in the missing numbers from the 100 Chart:

1.



2.



3. Order these numbers from smallest to largest: 43, 39, 52 _____

4. thirty-six _____ **5.** eighty-nine _____ **6.** 3 tens more than 18 _____

Use two of the digits 2, 6, and 7 to form:

7. even number between 20 and 30 _____ **8.** odd number less than 30 _____

9. even number greater than 30 _____ **10.** even number between 40 and 50 _____

Go On Write a two-digit number whose digits add up to 8.

100 Chart Cover

Topic: Place Value

Object: Place one marker in each row.

Groups: Pair players or 2–4 players

Materials for each group

- 100 Chart (one for each player), p. 146
- markers
- 2 sets of Digit Cards, p. 148

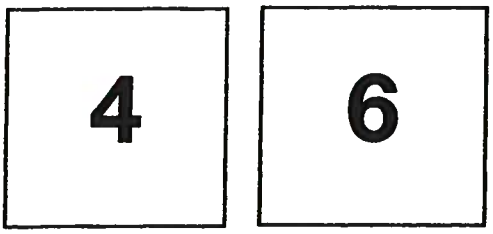
Directions

1. A player mixes two sets of Digit Cards and stacks them facedown.
2. Each pair (player) takes two Digit Cards and forms a two-digit number. The formed number is stated and covered on the 100 Chart.
3. Play continues until one or both pairs place at least one marker in each row. Keep in mind the zero will need to be placed in the tens column to form most numbers in the first row.

Making Connections

Promote reflection and make mathematical connections by asking:

- What strategy helped you cover a number in every row?
- How could this game be made more challenging?



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	●	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

100 Chart Paths

Topic: Place Value

Object: Form a continuous path from one side to the other.

Groups: Pair players or 2 players

Materials for each group

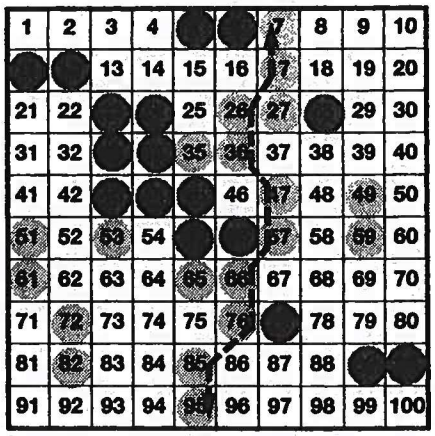
- 100 Chart (gameboard), p. 146
- different-colored markers for each pair
- 2 sets of Digit Cards, p. 148

Tip To increase possibilities and enhance strategic thinking, have pairs draw three cards and use two of them to form a number.

Directions:

1. After the Digit Cards are mixed and stacked, the first pair draws two Digit Cards, forms a two-digit number, and covers the formed number on the 100 Chart. Then the pair adds or subtracts ten or one from the just-covered number. The pair states the resulting equation and covers the answer.

   Example: After drawing 3 and 4, the pair arranges them to make 43 or 34 and covers the selected number. If choosing to make 43, the pair could state, "43 – 10 = 33" and also cover 33.



2. The other pair draws two Digit Cards, forms a two-digit number, and covers this number (with a different-colored marker) on the same 100 Chart. Next this pair adds or subtracts ten or one, states the equation, and covers the answer.

   Example: After drawing 2 and 7, the pair may cover 27 on the board, state "27 – 1 = 26", and also cover 26.

3. Pairs take turns until one pair completes a path. A completed path may include squares that share only a common corner.
4. A pair might cover only the number made with the Digit Cards if the sums and differences are already covered. If no squares can be covered by creating a number with the two cards drawn, the pair draws a third Digit Card and uses any two of the three digits.

Making Connections:

Promote reflection and make mathematical connections by asking:

- What patterns did you notice?

Will It Fit?

Topic: Place Value

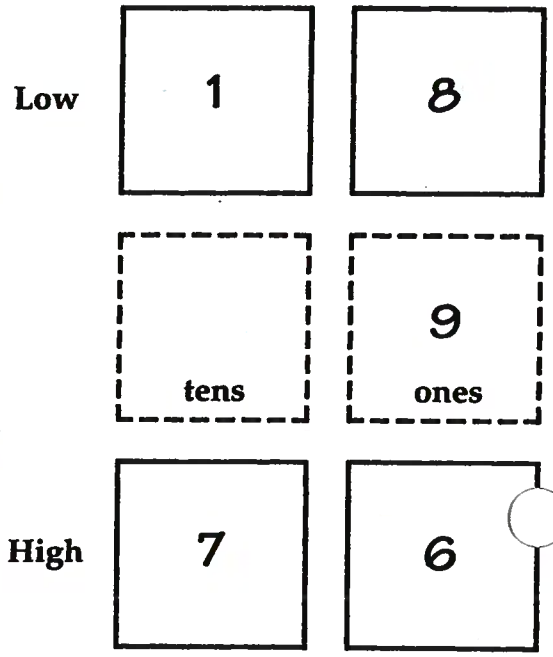
Object: Form a two-digit number within an identified range.

Groups: 2 players

Tip If children seem ready, extend this into a three-digit game.

Materials for each group

- set of Digit Cards, p. 148
- *Will It Fit?* gameboard, p. 87



Directions

1. One player mixes the Digit Cards and gives each player three cards.
2. The player whose first name comes first alphabetically uses two of the three cards to form the lowest possible two-digit number.
3. The first player announces the formed number and places the selected Digit Cards in the boxes at the top of the gameboard.
4. The other player uses two of his or her three cards to form the highest possible two-digit number.
5. The other player announces a formed number and places the selected Digit Cards in the bottom boxes.
6. The first player draws the next Digit Card. Keeping in mind that the center number needs to fit between the two displayed numbers, together the players decide whether to place the drawn card in the ones or tens place.
7. The last card is drawn and placed in the remaining box. Players win the round if this new two-digit number fits between the displayed low number and high number.
8. A player gathers all the Digit Cards, mixes them again, and plays another round.

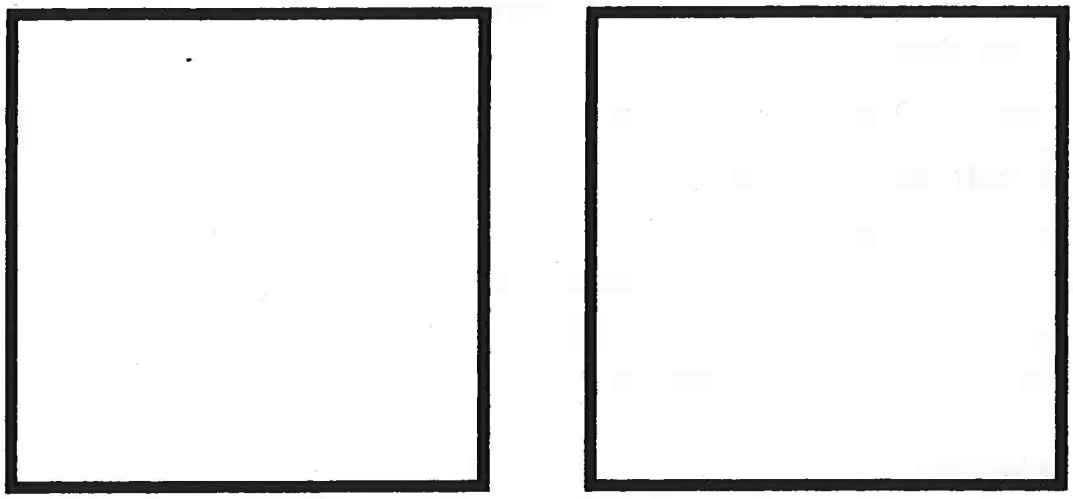
Making Connections

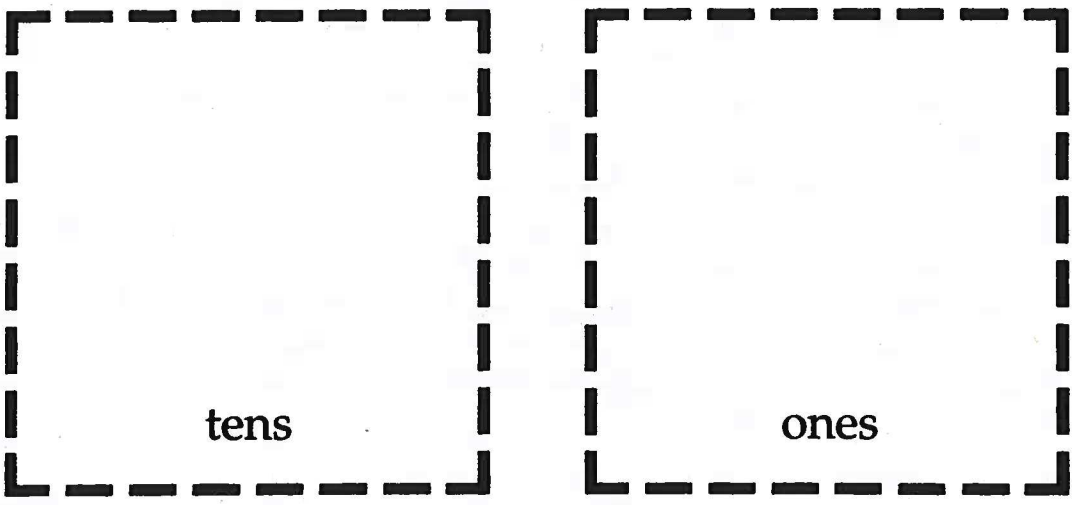
Promote reflection and make mathematical connections by asking:

- Which digits were preferred draws at the beginning of the game? Why?
- How would you like to change this game?

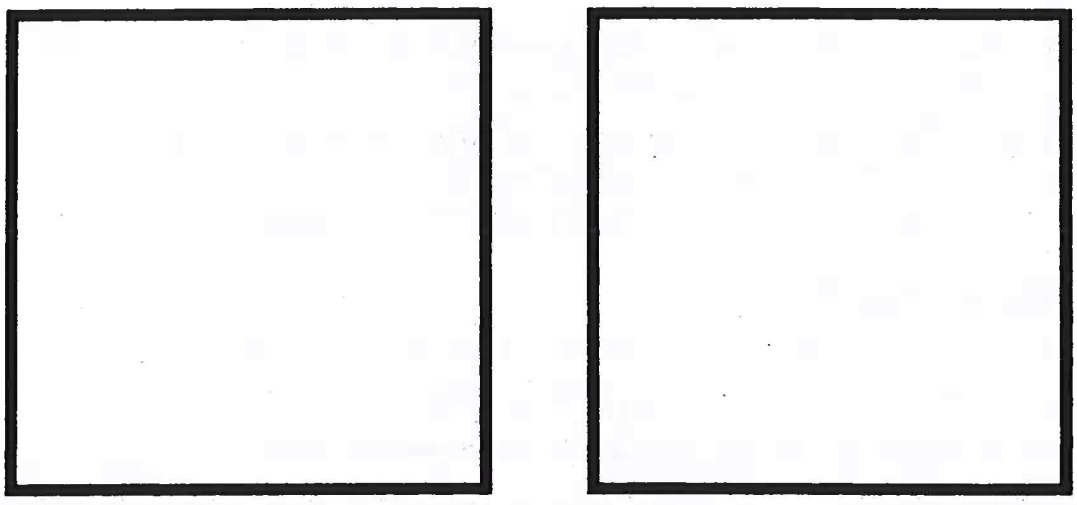
Will It Fit?

Low





High



Where?

Topic: Place Value

Object: Put three numbers in a row, following the correct number sequence.

Groups: Pair players or two players

Materials for each group

- *Where?* recording sheet, p. 89
- 2 colored pencils or pens (contrasting colors)
- Number Cube (1–6), p. 151
- special Number Cube (3–8), p. 151

Tip *Some children appreciate the use of the 100 Chart, p. 146, as a reference when determining or challenging placement of selected numbers.*

Directions

1. Ask children to recall the *Where Will It Fit?* Sponge and the importance of carefully placing and ordering numbers in each row from smallest to largest. Remind children that the winner is the first pair to get three numbers in a row, vertically, horizontally, or diagonally. Help children identify the range of numbers for each row and realize that extra care is required when placing numbers in rows two and three.
2. The first pair rolls the two number cubes, announces the possible two-digit numbers, decides which number to use, and indicates where to place that number. The other pair agrees that the placement is correct before the first pair records the number with its color pencil. If the second pair challenges the placement, that pair must explain why.

   Example: If 6 and 3 are rolled, the pair may select and appropriately record 36 in column 3 of row 2, or 63 in column 4 of row 4.

11						29
** 30						39
** 40						49
50				63		69
70						89

3. The other pair rolls the two cubes and follows the same procedure, recording the number using a contrasting color.
4. Pairs continue alternating turns and following these steps until one pair records three of its numbers in a row. When a pair's roll produces numbers that cannot be placed, that pair passes.

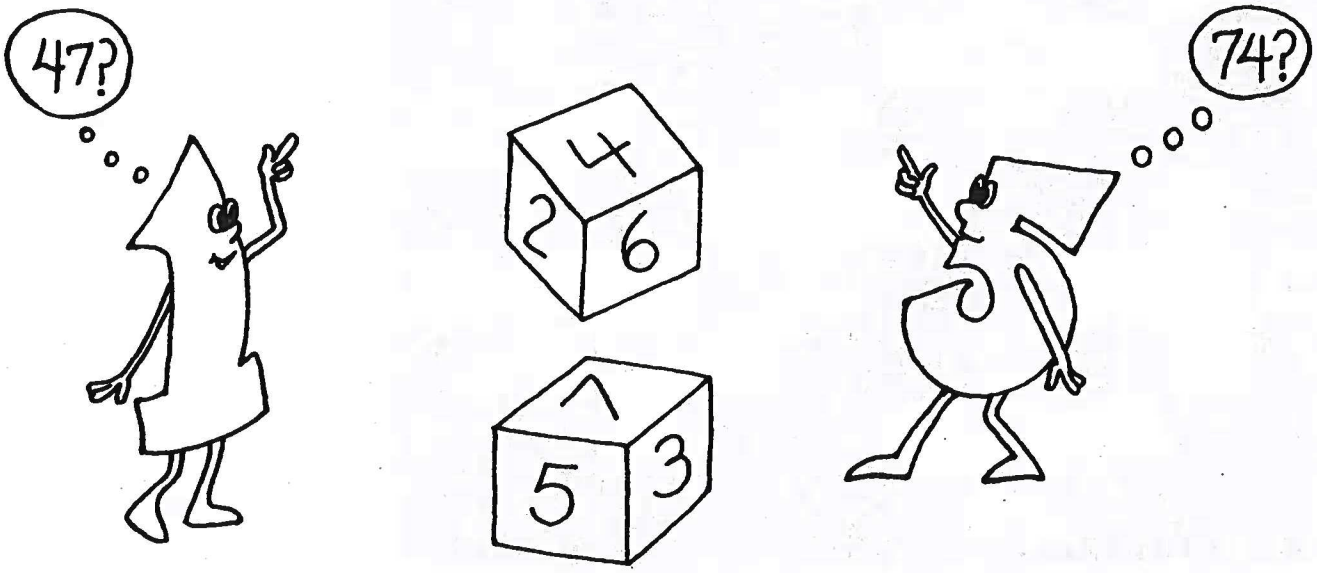
Making Connections

Promote reflection and make mathematical connections by asking:

- What made it difficult to block your opponent?
- What strategies helped you line up three numbers in a row?

Where?

					29
**	30				39
**	40				49
	50				69
	70				89



Date _____ Name _____

What Numbers Are Missing? I

Use the few numbers shown in this 100 chart to write the missing numbers in the empty spaces.

								9	
	12				16				
				25				29	
31					36				
							48		
		53						59	
61						67			
				75					80
	82						88		
								99	

	2				6				
				15				19	
			34						
									50
						57		59	
61					66				
			74				78		

18 Plus

Topic: Addition

Object: Cover three in a row with your markers.

Groups: Pair players or 2 players

Tip *To extend the playing and practice time, require winners to cover 4 markers in a row.*

Materials for each group

- *18 Plus* gameboard, p. 106
- markers (different kind for each pair)
- special Number Cube (4–9), p. 152

Directions

1. The first pair rolls the special Number Cube to determine the amount to add to 18. After the pair states the equation including the sum, they place one of their markers on the number that equals the sum.

   Example: If 7 is rolled, pair states, "18 plus 7 equals 25," and covers one of the 25s on the gameboard.

2. Pairs alternate turns, following this procedure until one pair wins by placing three of their markers in a row horizontally, vertically, or diagonally.
3. To provide additional practice with a different 2-digit addend, use the *26 Plus* gameboard. *26 Plus* also requires the use of a 4–9 Number Cube (or spinner).

26	24	23	27
●	●	26	23
23	27	25	24
25	24	27	22

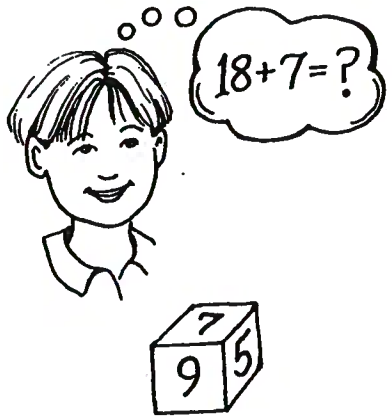
Making Connections

Promote reflection and make mathematical connections by asking:

- What strategies did you use in placing your markers?
- Were some numbers easier to cover than others?
- Was it difficult to block your opponent? Why or why not?

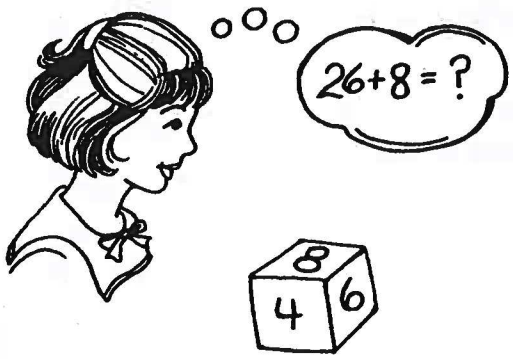
18 Plus

26	24	23	27
25	22	26	23
23	27	25	24
25	24	27	22



26 Plus

32	34	31	35
35	33	34	30
34	35	32	33
30	32	30	31



Slide and Sum

Topic: Mental Addition

Object: Add to a specified target sum.

Groups: Pair players or 2 players

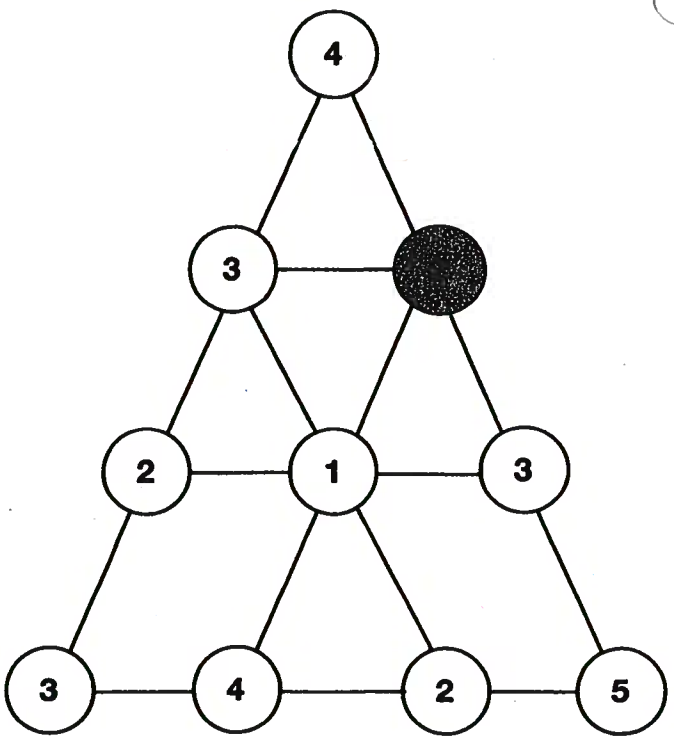
Tip *Encourage strategic thinking by having players keep the same target sum for multiple rounds.*

Materials for each group

- *Slide and Sum* gameboard, p. 109
- one marker

Directions

1. Players pick a target sum between 20 and 30.
2. The first pair places the marker on any number and announces that number.
3. The second pair slides the same marker along a line in any direction to identify the next number. The pair adds this number to the previous number and states the total.
4. The pairs alternate turns by sliding the marker to another number, adding that amount to the previous total, and announcing the new total. Pairs must move the marker and give a new total on each turn. Pairs may return to previously used numbers.
5. The pair who states the target sum as their new total wins that round.
6. If a pair is forced to exceed the target sum, the game ends without a winner.

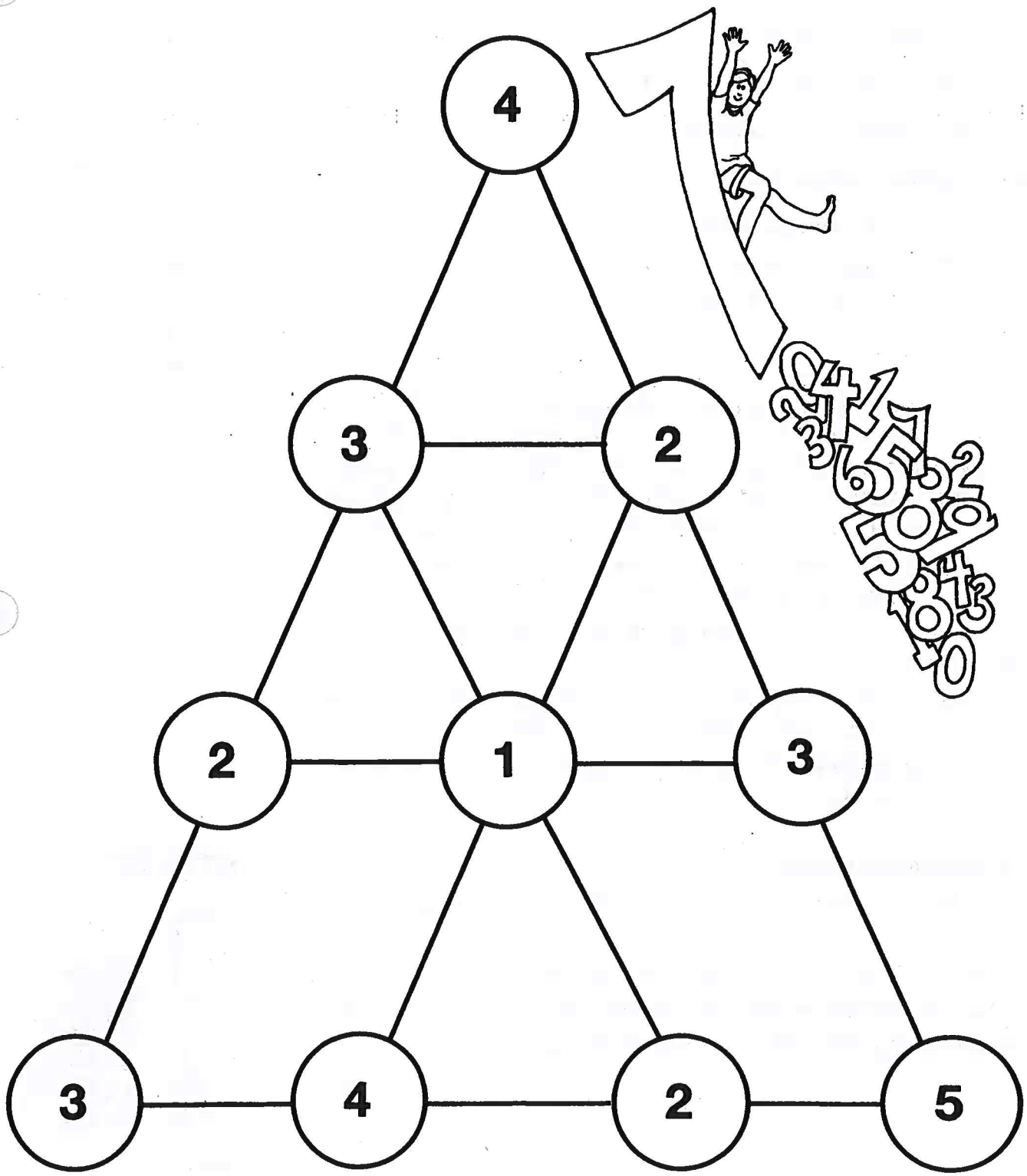


Making Connections

Promote reflection and make mathematical connections by asking:

- Where is a good starting place?
- What strategy helped you reach the target sum?
- If zero were added to the gameboard, where should it be placed?

Slide and Sum



Target 50

Topic: Mental Addition to 50

Object: Reach close to the sum of 50.

Groups: Pair players or 2 players

Materials for each pair

- *Target 50* recording sheet, p. 111
- set of Digit Squares (only the digits 1–5), p. 149
- opaque container for Digit Squares

Tip If children become confident playing this version, challenge them with higher target numbers. For example, have them draw five Digit Squares and extend the target number to 75.

Directions

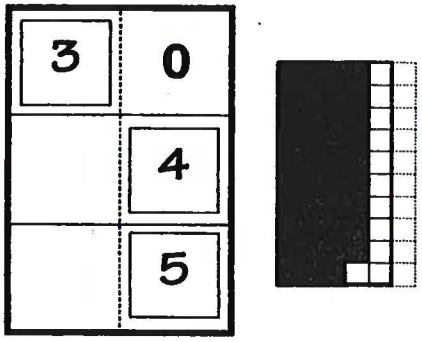
1. Each pair has a recording sheet and a container with Digit Squares 1–5. The first pair draws one Digit Square and decides whether to put it in the tens place or ones place. Once a square is placed it cannot be moved. To visualize how close a pair is to 50, the pair shades the grid on the recording sheet after each turn.
2. The other pair follows the same procedure, drawing a Digit Square and placing it on the recording sheet.
3. Pairs alternate turns by drawing and placing Digit Squares two more times.
4. After placing three Digit Squares, each pair totals the results and records the difference between the total and 50.
5. The differences found in step 4 are the scores. The pair with the lower score wins.

Making Connections

Promote reflection and make mathematical connections by asking:

- Why do you think the player with the lower score wins?
- How did you decide where to place your digits?
- How would you play differently in future games?

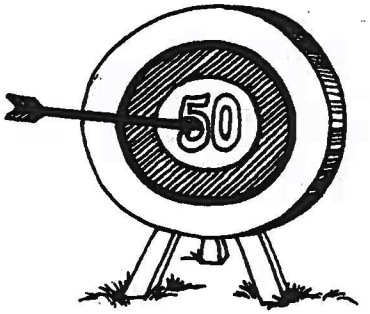
Target 50



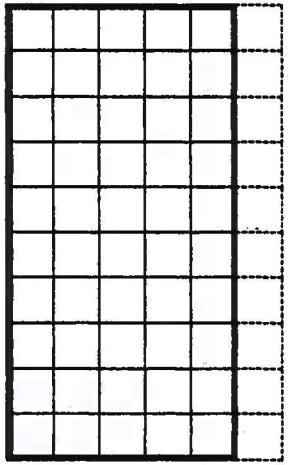
39

Total

Target 50



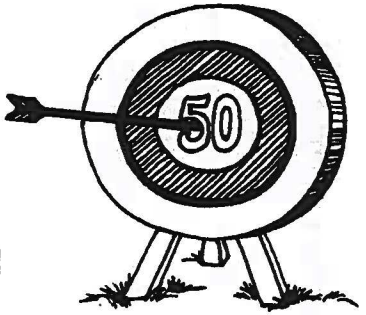
	0
	0
	0



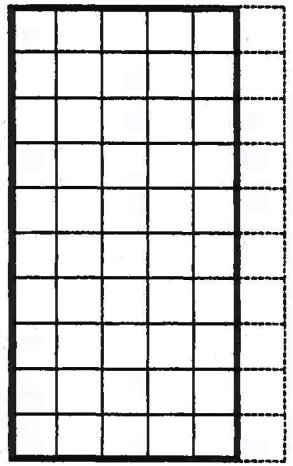
Total

Score: _____
(Difference from 50)

Target 50



	0
	0
	0



Total

Score: _____
(Difference from 50)

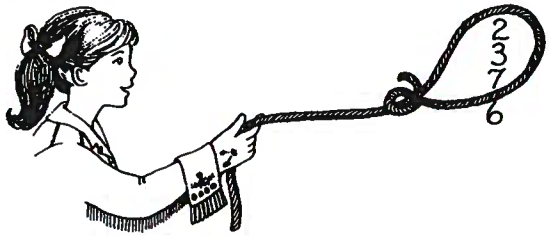
Date _____ Name _____

Loop Addition I

Draw loops around two groups of numbers to match the sum. See the example.

Example **15** 3 3 3 4 4 4 3 + 4 + 4 + 4 = 15	**10** 2 2 2 3 3 3	**11** 2 2 2 3 3 3
12 2 2 2 4 4 4	**14** 2 2 2 4 4 4	**16** 2 2 2 4 4 4
14 3 3 3 4 4 4	**17** 3 3 3 4 4 4	**18** 3 3 3 4 4 4

Draw a loop around one group of numbers to match the sum.



Example: **Sum = 12**

2
3
7

6

Sum = 11	Sum = 12	Sum = 13	Sum = 10	Sum = 14	Sum = 13	Sum = 15
6	3	7	2	2	3	4
2	6	1	5	7	4	3
3	4	5	0	3	5	8
4	2	4	2	4	4	5
		2	3	4	1	3

Date _____ Name _____

What's the Difference? 5

STOP Don't start yet!
Star the problems in Row 3 that may have answers greater than 50.

1. $21 - 9 =$ _____ **2.** $38 - 10 =$ _____ **3.** $34 - 5 =$ _____

4. $\square + 12 = 20$ **5.** $42 - 19 =$ _____

6.	**7.**	**8.**	**9.**	**10.**
51	40	53	246	170
-6	-26	-17	-7	-23
____	____	____	____	____

Go On Which number is closer to 73: 65 or 78?
Please prove it.

Date _____ Name _____

What's the Difference? 6

STOP Don't start yet!
Star the problem that may have the largest answer.

1. $34 - 8 =$ _____ **2.** $43 - 9 =$ _____ **3.** $49 - 30 =$ _____

4. $11 + \square = 20$ **5.** $31 - 29 =$ _____

6.	**7.**	**8.**	**9.**	**10.**
44	50	34	451	180
-7	-28	-26	-7	-47
____	____	____	____	____

Go On Write three subtraction equations that equal 28.

Subtract and Travel

Topic: Subtraction

Object: Create a pathway across the board.

Groups: Pair players or 2 players

Materials for each group

- Markers (different kind for each pair)
- special Number Cube (3-3-4-4-5-5), p. 152
- *Subtract and Travel A* gameboard, p. 131

Directions

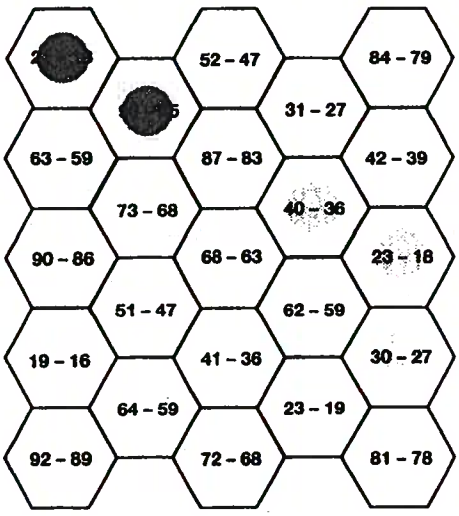
1. After tossing the 3-3-4-4-5-5 Number Cube, the first pair looks for cells with differences that match the tossed digit. The pair announces the equation (such as "90 minus 85 equals 5") and covers one of the identified cells with a marker.
2. The other pair follows the same procedure but uses a different kind of marker. (Only one marker can occupy a single cell.)
3. Pairs continue alternating turns until one pair forms a continuous pathway *across* the gameboard (top to bottom or left to right).

Tip When children are ready for a greater challenge, use Subtract and Travel B *gameboard, p. 132. Note a different special number cube is required, p. 152 (5-5-6-6-7-7). The blank* Subtract and Travel *gameboard included with the Blackline Masters (p. 154) allows further variation and use of this popular Game.*

Making Connections

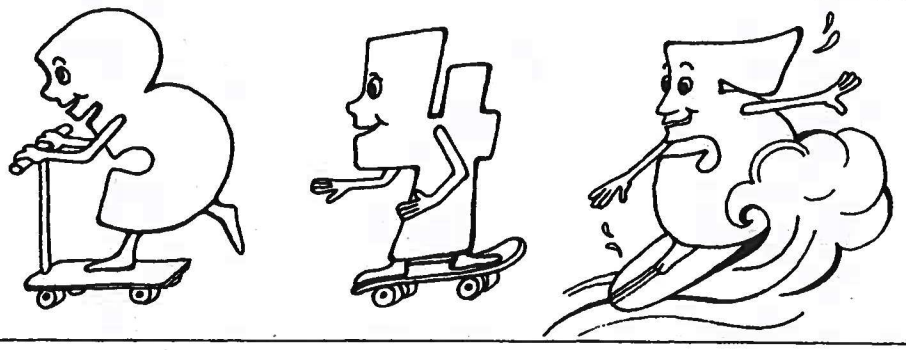
Promote reflection and make mathematical connections by asking:

- What strategy helped you place your markers in a complete pathway?



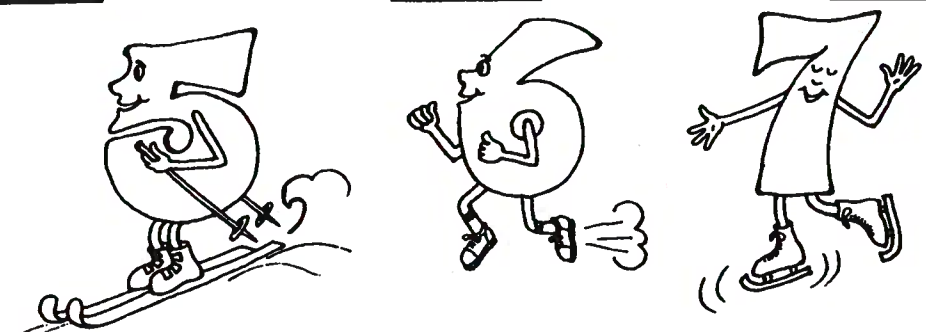
Subtract and Travel A

21 – 18		52 – 47		84 – 79
	90 – 85		31 – 27	
63 – 59		87 – 83		42 – 39
	73 – 68		40 – 36	
90 – 86		68 – 63		23 – 18
	51 – 47		62 – 59	
19 – 16		41 – 36		30 – 27
	64 – 59		23 – 19	
92 – 89		72 – 68		81 – 78



Subtract and Travel B

36 – 31		72 – 66		56 – 51
	52 – 45		36 – 29	
29 – 23		41 – 34		18 – 12
	43 – 38		40 – 34	
33 – 26		41 – 36		62 – 57
	45 – 38		43 – 37	
51 – 45		22 – 17		50 – 43
	36 – 29		53 – 46	
29 – 24		60 – 54		39 – 33



Differences Count

Topic: Mental Subtraction

Object: Create qualifying subtraction equations.

Groups: Pair players or 2 to 4 players

Materials for each group

- *Differences Count A* recording sheet (one for each pair), p. 134
- two sets of Digit Cards, p. 148

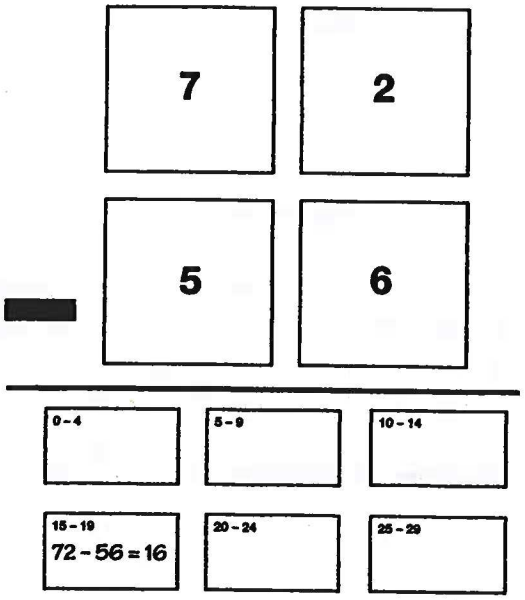
Tip For a greater challenge, use the Differences Count B *recording sheet with the same materials and rules.*

Directions

1. Each pair receives a recording sheet and draws four Digit Cards. Then each pair forms 2 two-digit numbers and finds the difference, thus creating an equation.
2. Looking at the bottom of the recording sheets, each pair finds the cells containing the "differences" they found. Then each pair records its equation in the appropriate cell.

   Example: One pair draws 7, 5, 2, 6; forms the problem *72 – 56;* states the equation "72 minus 56 equals 16;" and records the equation in the cell labeled *15–19* on the recording sheet.

3. Pairs continue play until one pair completes all cells on the recording sheet. After every two rounds, cards should be mixed and restacked.
4. When a pair is unable to form a needed subtraction equation, nothing is recorded for that turn.

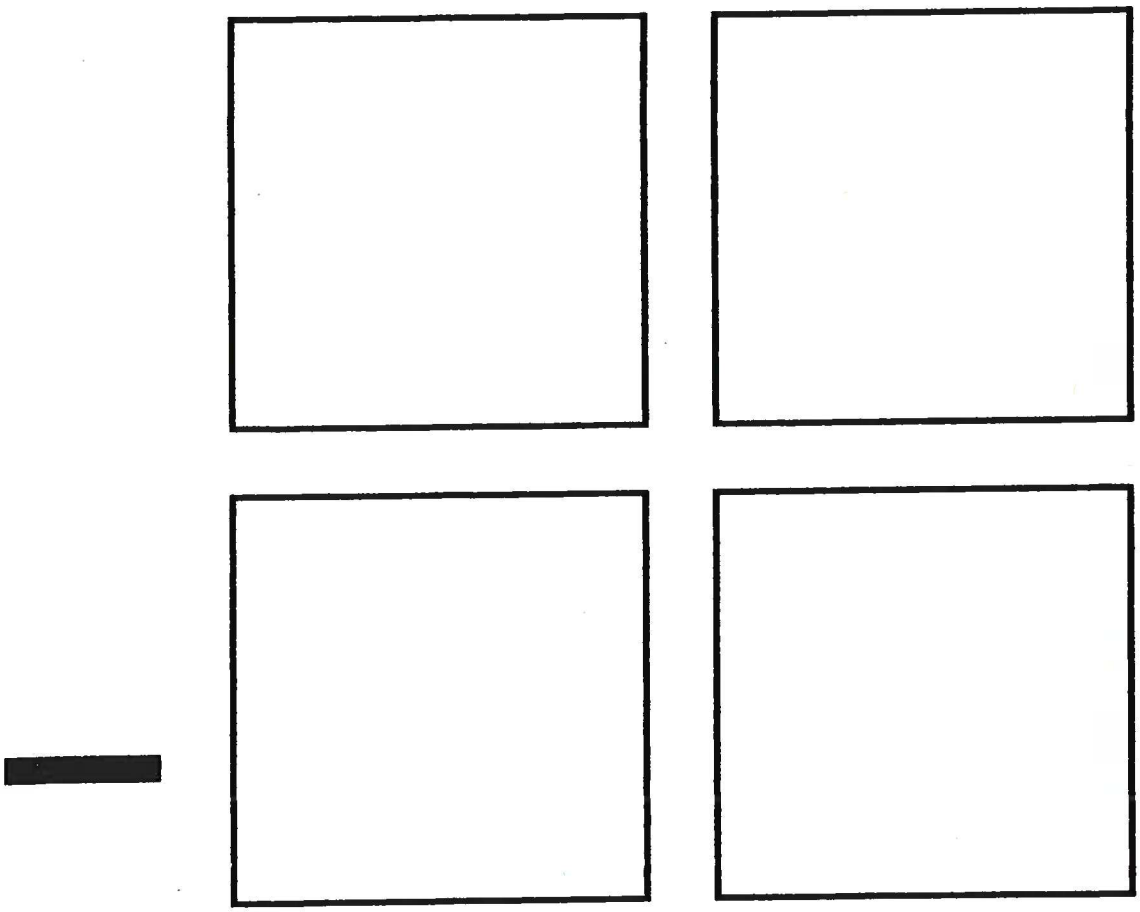


Making Connections

Promote reflection and make mathematical connections by asking:

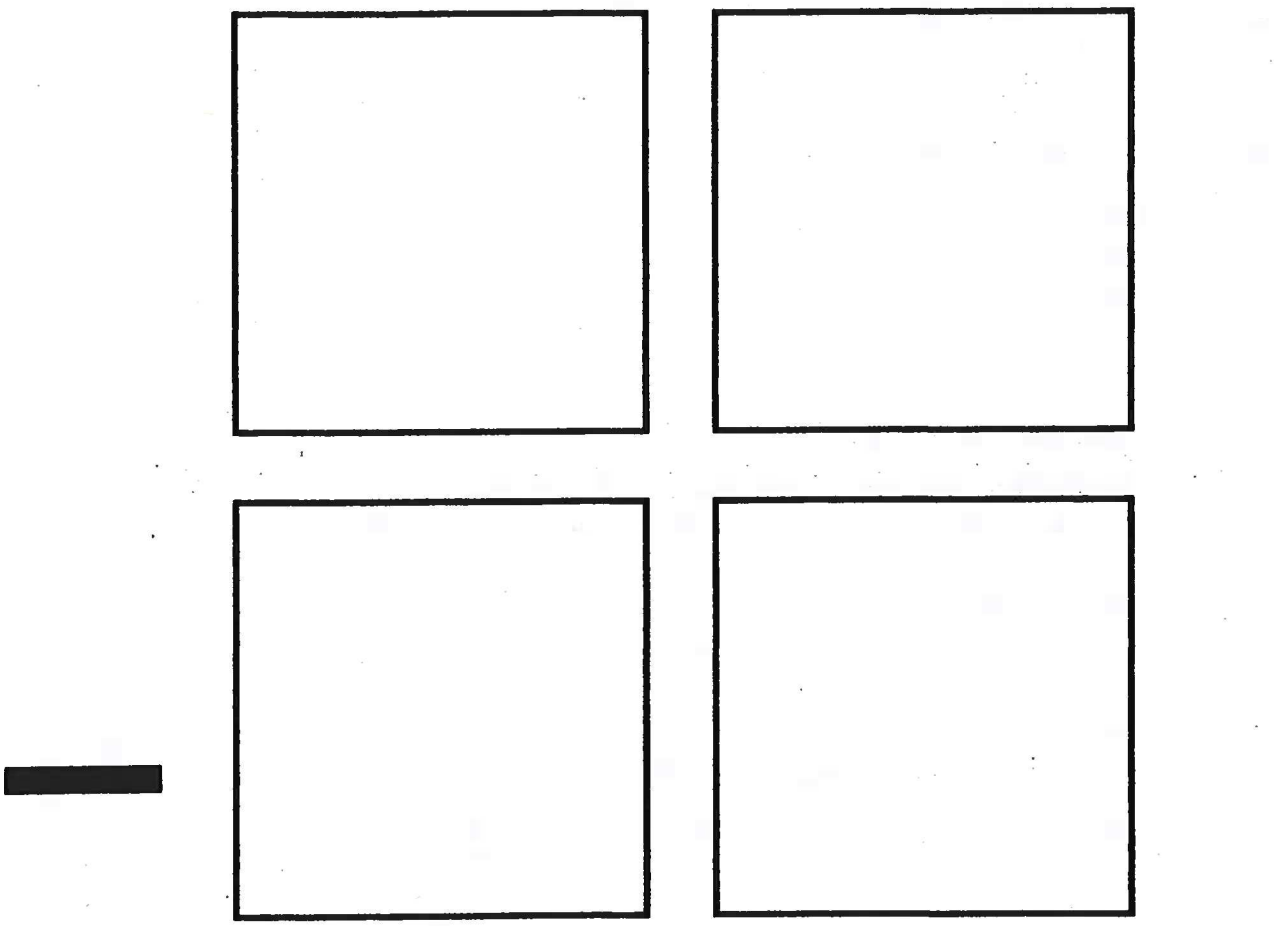
- What strategy did you use to help you find the difference?
- Describe the characteristics of a good draw (or a poor draw).
- Which differences were harder to find?

Differences Count A



0 – 4	5 – 9	10 – 14
15 – 19	20 – 24	25 – 29

Differences Count B



30 – 34	35 – 39	40 – 44
45 – 49	50 – 54	55 – 59

Difference Bingo

Topic: Subtraction

Object: Cover three numbers in a row.

Groups: Pair players or 2 players

Materials for each group

- *Difference Bingo A* gameboard, p. 137
- 2 sets of Digit Cards (digits 1–5 only), p. 148
- markers (a different kind for each pair)

Directions

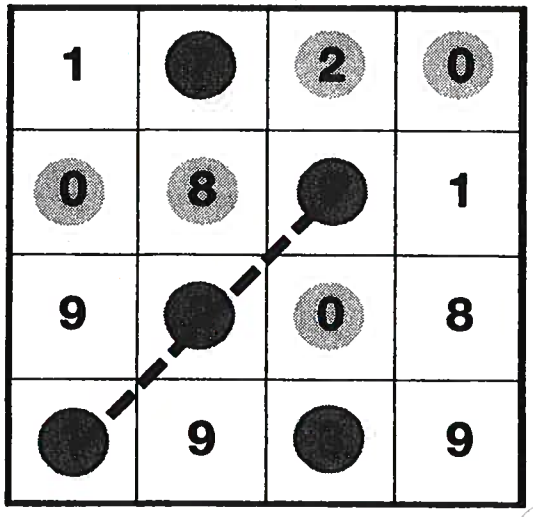
1. Each pair draws 4 Digit Cards.
2. Each pair forms 2 two-digit numbers and finds the difference between the 2 two-digit numbers. If the difference appears on the gameboard, the pair places a marker on the difference. If not, the pair rearranges drawn Digit Cards until able to form a subtraction problem with a difference that appears on the gameboard.
3. Play continues with each pair taking turns until one pair has three markers in a row horizontally, vertically, or diagonally.
4. If it is not possible to form a subtraction problem equal to an uncovered difference, the pair does not place a marker for that turn.

Tip For a greater challenge, use Difference Bingo B *gameboard with one complete set of Digit Cards plus cards 0–4. Players use only 4 out of 5 drawn Digit Cards. The winner is the first player to get three markers in a row.*

Making Connections

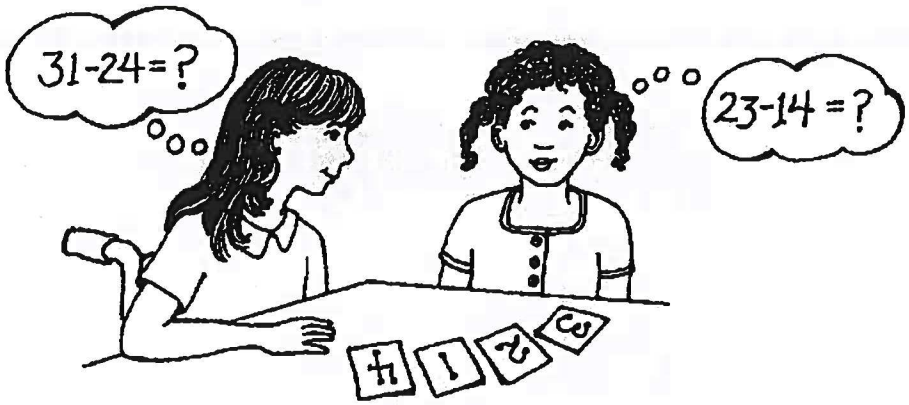
Promote reflection and make mathematical connections by asking:

- Were some differences easier or more difficult to make than others? Why do you think this is so?
- How were you able to use patterns to help you win this game?
- What strategy did you use to help you place three markers in a row?



Difference Bingo A

1	7	2	0
0	8	9	1
9	2	0	8
1	9	3	9



Difference Bingo B

4	9	2	11	8
11	8	5	14	0
7	12	9	4	13
10	6	3	5	7
2	1	15	10	6