MATH WISE

CALCULATION AND COMPUTATION PROGRAM AT SECOND GRADE

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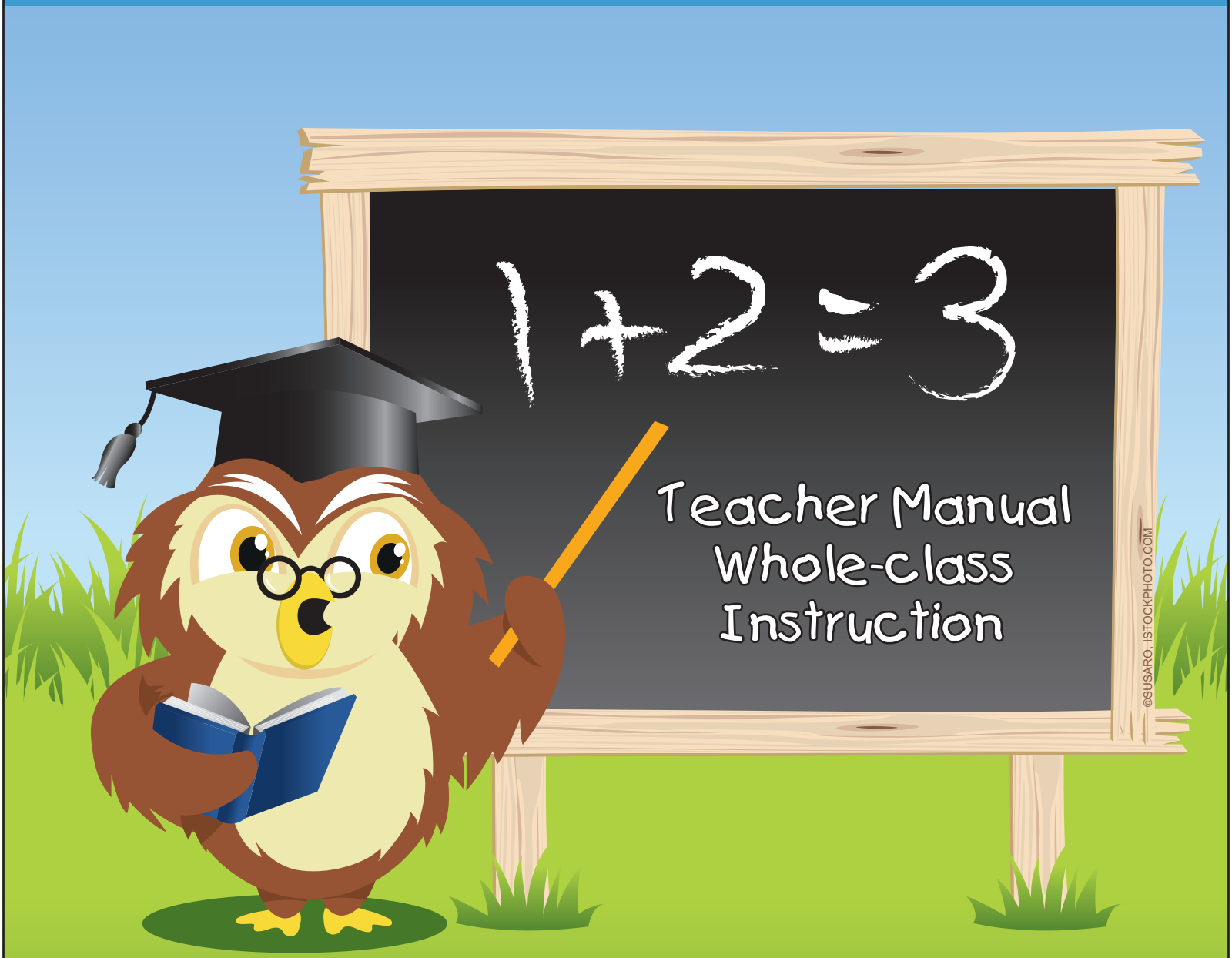
Vanderbilt University



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VANDERBILT Peabody College

Special Education

Dear Educator,

Thank you for your interest in Math Wise Calculation and Computation Program for Whole Class Instruction at 2nd Grade developed at Vanderbilt University. We are pleased to offer you this excerpt to review.

These pages from the Math Wise manual and supplemental materials are provided as a courtesy to allow you to preview a representative sampling of the Math Wise Intervention program for 2nd Grade students. This excerpt includes the following:

1. Introduction
2. Teacher Lessons, Transparencies, and Lesson Materials
    a. Lesson 1: Instruction on the equal sign
    b. Lesson 2: Counting up addition
    c. Lesson 13: Counting up subtraction

If you would like to place an order for Math Wise, please visit the Website for the Fuchs Research Group at http://vkc.mc.vanderbilt.edu/fuchs-dev/. If you have questions, email Lynn Davies at lynn.a.davies@vanderbilt.edu.

Thank you for your interest in Vanderbilt University's Math Wise Program.

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Math Wise

Calculation and Computation Program at Second Grade

TEACHER MANUAL
Whole-Class Instruction

Lynn S. Fuchs, Sarah R. Powell, & Doug Fuchs

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Lessons (Lessons 1-34)
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Introduction

Welcome to Math Wise! Math Wise comprises whole-class (primary prevention) and small-group (secondary prevention) levels of math calculation instruction for use with students at second grade instructional level. The focus of Math Wise is single- and double-digit addition and subtraction with and without regrouping in terms of calculations and the associated concepts.

This manual contains the teacher lessons and student materials necessary to implement Math Wise at the whole-class level. A separate manual contains the tutor lessons and student materials for conducting Math Wise Small-Group Tutoring for students at-risk for poor outcomes with the Math Wise Whole-Class Instruction program.

Scientific evaluations of Math Wise indicate that not-at-risk and at-risk second-grade students make greater progress with Math Wise compared to students who do not participate in Math Wise on assessments of single- and double-digit computation.

In This Manual

This Teacher Manual contains the following:

Introduction
- Basic information about implementing Math Wise
- Schedule for implementation
- Information about pairing students for partner work
- List of materials and how to copy materials

Lessons 1-34
- Teacher lessons

Activity Guides
- Guides to core lesson components (teachers are referred to Activity Guides in the lessons)

Transparencies
- Templates for materials that teachers use during each lesson

Posters
- Templates for posters to use during lessons

Fidelity Checklists
- Checklists to ensure proper implementation of Math Wise

The Student Materials Packet contains the following:

Lessons
- Presented in four-day increments
- Copy 1 set for each pair of students

Time Owls
- Starts on Day 15
- Copy 1 half-sheet for each student

Implementation

Math Wise Primary Prevention is conducted **twice** each week for **17 school weeks**. Each session lasts **45 minutes**.

During each session, the teacher teaches a lesson to the students. Then, the students in the class are paired, and the pair works together to practice calculation and computation skills.

Daily Activities

Teacher Lesson (15-20 minutes)
- Teacher teaches a lesson to the whole class.
- Teacher uses Transparencies for visual representations.

Coaching (15 minutes)
- During Coaching, students take turns as Coaches and Players. The higher-performing student is the "first Coach" and coaches on the first half of the Coaching Sheet. The lower-performing student is the "second Coach" and coaches on the second half of the Coaching Sheet.
- During Coaching, the teacher monitors student pairs and awards bonus points for students following the Partner Rules. Points are recorded on each pair's Point Sheet.

Time Owl (3 minutes) - DAYS 15-34 ONLY
- The teacher reads aloud a directive (e.g., "Solve the addition problems with trading").
- Students work for 1 minute.
- Students switch Time Owls with their partner and grade each other's Time Owl.
- Each student earns 1 point on the Point Sheet for reaching a specific goal (e.g., 7 correct).

Practice (10 minutes)
- During Practice, each student works individually on a Practice Sheet for 5 minutes.
- Students then switch Practice Sheets with their partner and grade each other's Practice Sheet.
- Each student earns 1 point on the Point Sheet for working hard on their Practice Sheet.
- Students calculate Point Sheet score. Pair with the highest score collects all the folders.

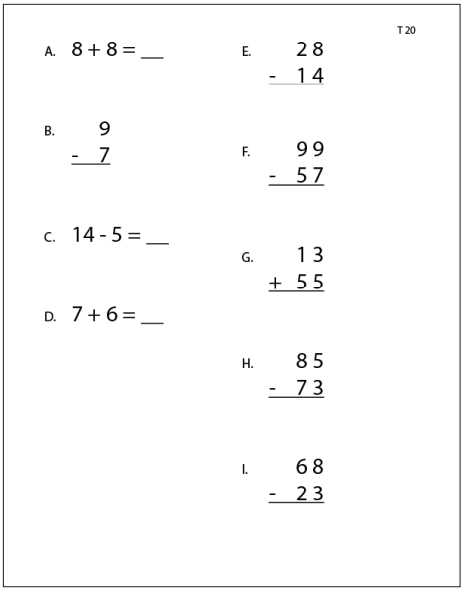
Schedule

DAY	TEACHER LESSON	PARTNER WORK
1	Understanding math symbols	Learn to complete Practice Sheet
2	Introduce counting up addition	Learn to "Coach"
3	Counting up addition	Practice Coaching
4	Counting up addition	Learn to "self-talk"
5	Introduce addition without regrouping	Addition without regrouping
6	Addition without regrouping	Addition without regrouping
7	Addition without regrouping	Addition without regrouping; Helping partners
8	Addition without regrouping	Addition without regrouping; Helping partners
9	Introduce addition with regrouping	Addition with regrouping
10	Addition with regrouping	Addition with regrouping
11	Addition with regrouping	Addition with regrouping
12	Addition with regrouping	Addition with regrouping
13	Introduce counting up subtraction	Counting up subtraction
14	Counting up subtraction	Counting up subtraction
15	Counting up subtraction	Counting up subtraction Time Owl begins between Coaching and Practice
16	Counting up subtraction	Counting up subtraction
17	Introduce subtraction without regrouping	Subtraction without regrouping
18	Subtraction without regrouping	Subtraction without regrouping
19	Subtraction without regrouping	Subtraction without regrouping
20	Subtraction without regrouping	Subtraction without regrouping
21	Introduce subtraction with regrouping	Subtraction with regrouping
22	Subtraction with regrouping	Subtraction with regrouping
23	Subtraction with regrouping	Subtraction with regrouping
24	Subtraction with regrouping	Subtraction with regrouping
25	Addition and subtraction review	Addition and subtraction review
26	Addition and subtraction review	Addition and subtraction review
27	Addition and subtraction concepts	Addition and subtraction review
28	Addition and subtraction concepts	Addition and subtraction review
29	Addition and subtraction concepts	Addition and subtraction review
30	Addition and subtraction concepts	Addition and subtraction review
31-34	Addition and subtraction review	Addition and subtraction review

Teacher Materials

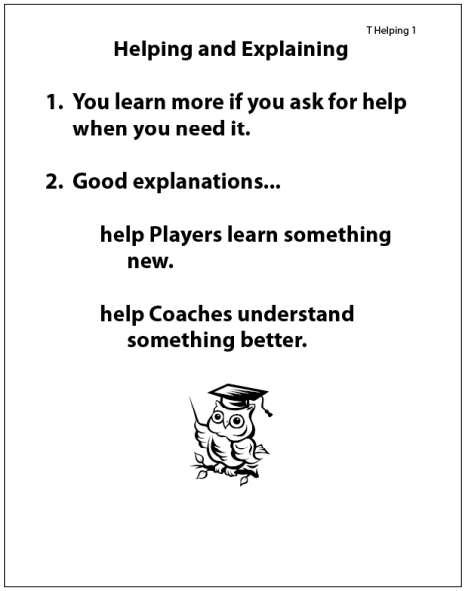
During each teacher lesson, the teacher will use *Transparencies*. Each transparency is labeled with a **T**. These do not have to be copied as transparencies. They can be projected via a document camera or scanned and projected via projector. The display of each transparency should be large enough so all students in the classroom can see the transparency. The teacher writes on some transparencies; others are for examples.

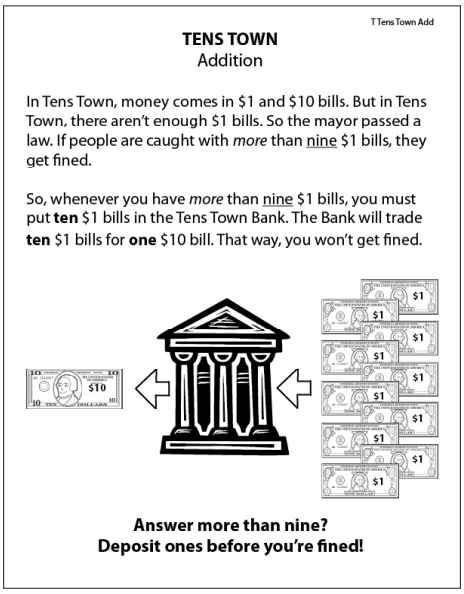
The transparencies are in the manual in the order they are presented to students. The following are examples of transparencies:



This sample transparency is labeled in the top left corner (T 20). It is the transparency for teacher lesson 20.

This sample transparency is used in a teacher lesson in which students learn about helping their partner. The transparency is labeled in the top left corner (T Helping 1), so this is the first transparency teachers use to discuss partner help.





T Tens Town Add

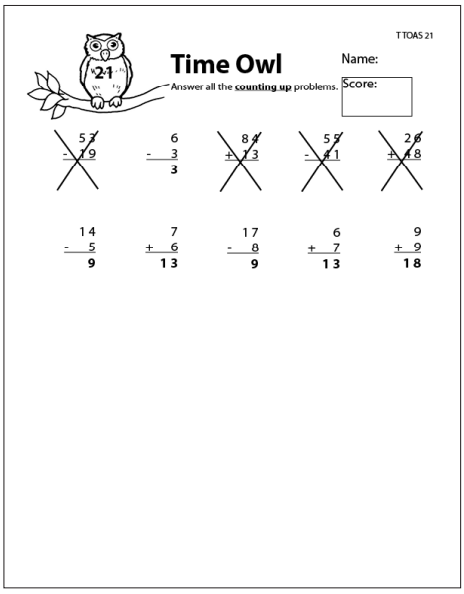
TENS TOWN
Addition

In Tens Town, money comes in $1 and $10 bills. But in Tens Town, there aren't enough $1 bills. So the mayor passed a law. If people are caught with *more* than nine $1 bills, they get fined.

So, whenever you have *more* than nine $1 bills, you must put **ten** $1 bills in the Tens Town Bank. The Bank will trade **ten** $1 bills for **one** $10 bill. That way, you won't get fined.

Answer more than nine?
Deposit ones before you're fined!

The teacher uses this transparency to teach addition with regrouping.



TTOAS 21

Time Owl

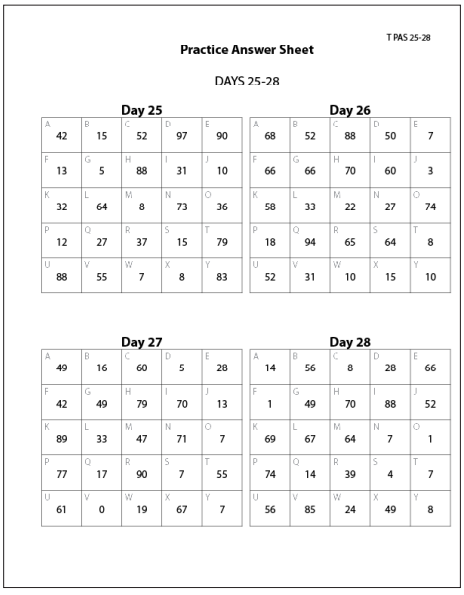
Name:

Answer all the **counting up** problems.

Score:

5 1 - 1 9 **3 2**	6 - 3 **3**	8 4 + 1 3 **9 7**	5 5 - 4 1 **1 4**	2 8 + 1 8 **4 6**
1 4 - 5 **9**	7 + 6 **1 3**	1 7 - 8 **9**	6 + 7 **1 3**	9 + 9 **1 8**

The teacher uses this transparency to show students answers to the Time Owls.



T PAS 25-28

Practice Answer Sheet

DAYS 25-28

Day 25

A	B	C	D	E
42	15	52	97	90
F	G	H	I	J
13	5	88	31	10
K	L	M	N	O
32	64	8	73	36
P	Q	R	S	T
12	27	37	15	79
U	V	W	X	Y
88	55	7	8	83

Day 26

A	B	C	D	E
68	52	88	50	7
F	G	H	I	J
66	66	70	60	3
K	L	M	N	O
58	33	22	27	74
P	Q	R	S	T
18	94	65	64	8
U	V	W	X	Y
52	31	10	15	10

Day 27

A	B	C	D	E
49	16	60	5	28
F	G	H	I	J
42	49	79	70	13
K	L	M	N	O
89	33	47	71	7
P	Q	R	S	T
77	17	90	7	55
U	V	W	X	Y
61	0	19	67	7

Day 28

A	B	C	D	E
14	56	8	28	66
F	G	H	I	J
1	49	70	88	52
K	L	M	N	O
69	67	64	7	1
P	Q	R	S	T
74	14	39	4	7
U	V	W	X	Y
56	85	24	49	8

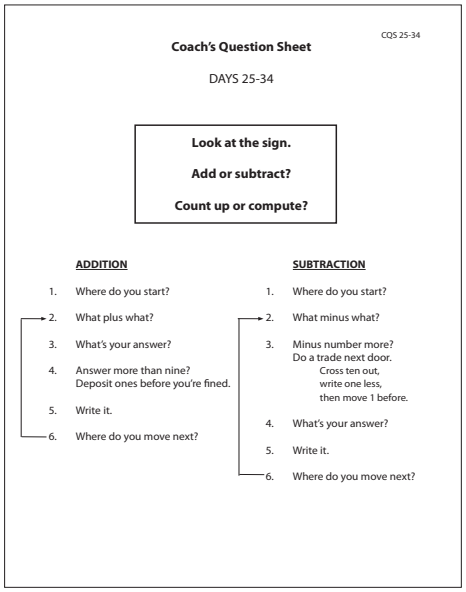
The teacher uses this transparency to show students answers to the Practice Sheets.

Student Materials

Each Math Wise session includes Partner Work. Partner Work comprises two parts: Coaching and Practice. Starting on Day 15, the Time Owl is administered between Coaching and Practice.

Here are sample materials used for each pair *for the Coaching part of the lesson.*

A **Coach's Question Sheet** provides the Coach with a series of short questions and statements to help him/her guide the Player through each problem.



CQS 25-34

Coach's Question Sheet

DAYS 25-34

Look at the sign.

Add or subtract?

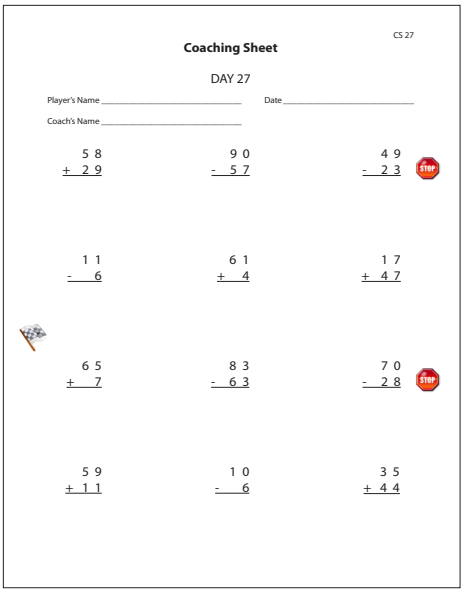
Count up or compute?

ADDITION

1. Where do you start?
2. What plus what?
3. What's your answer?
4. Answer more than nine? Deposit ones before you're fined.
5. Write it.
6. Where do you move next?

SUBTRACTION

1. Where do you start?
2. What minus what?
3. Minus number more? Do a trade next door. Cross ten out, write one less, then move 1 before.
4. What's your answer?
5. Write it.
6. Where do you move next?



CS 27

Coaching Sheet

DAY 27

Player's Name _____ Date _____

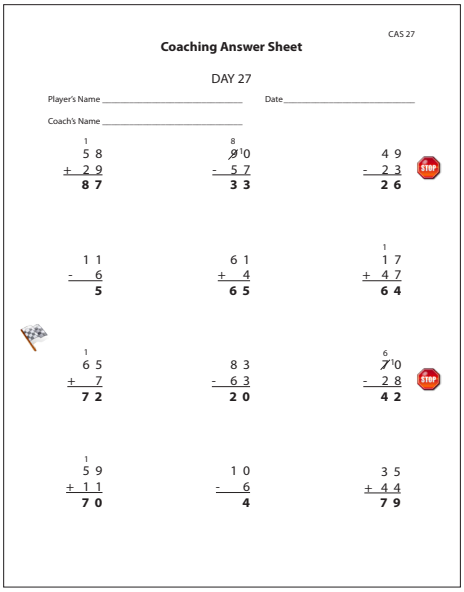
Coach's Name _____

58 + 29	90 - 57	49 - 23
11 - 6	61 + 4	17 + 47
65 + 7	83 - 63	70 - 28
59 + 11	10 - 6	35 + 44

A **Coaching Sheet** is shared by the Coach and Player.

The Coaching Sheet is divided into four rows of problems. The first Coach tutors on row 1 using the Coach's Question Sheet to guide the Player. A stop sign alerts the Coach to stop asking questions. The first Player self talks through each problem on row 2 while the Coach provides corrective feedback.

Then, the pair exchanges roles at the flag. The second Coach tutors on row 3 using the Coach's Question Sheet to guide the Player. A stop sign alerts the Coach to stop asking questions. The second Player self talks through each problem on row 4 while the Coach provides corrective feedback.



CAS 27

Coaching Answer Sheet

DAY 27

Player's Name _____ Date _____

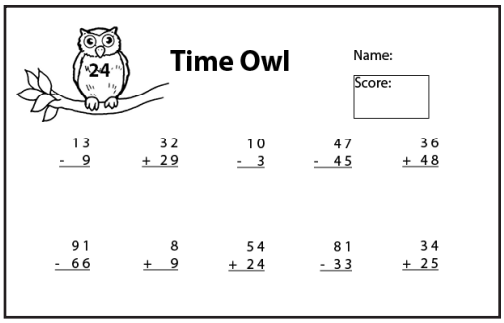
Coach's Name _____

58 + 29 = 87	810 - 57 = 33	49 - 23 = 26
11 - 6 = 5	61 + 4 = 65	17 + 47 = 64
65 + 7 = 72	83 - 63 = 20	710 - 28 = 42
59 + 11 = 70	10 - 6 = 4	35 + 44 = 79

The Coach uses a **Coaching Answer Sheet** to check the accuracy of the Player's responses on the Coaching Sheet.

The following are materials for each student *for the Time Owl.* (STARTS ON DAY 15.)

Each student receives a copy of a **Time Owl**. (The template for each Time Owl contains two Time Owls; the paper is cut in half.)

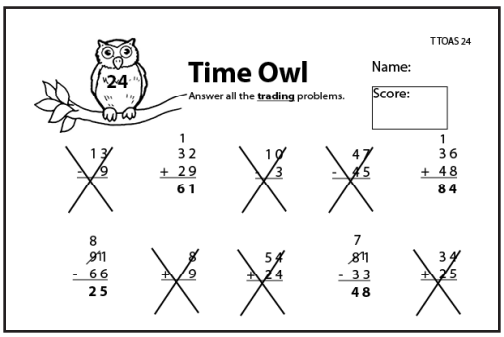


Time Owl Name: Score:

13 - 9	32 + 29	10 - 3	47 - 45	36 + 48
91 - 66	8 + 9	54 + 24	81 - 33	34 + 25

Before students begin work on the Time Owl, the teacher reads a direction (provided in the lesson). Students then work individually for 1 minute. Students answer problems that follow the direction and draw an X through problems that do not follow the direction.

At the end of the minute, students switch Time Owls and grade for correct answers and cross-outs. The correct answers are provided on a teacher transparency (TOAS = Time Owl Answer Sheet). Students who score above a cut point (as designed in the lesson) award themselves 1 point on the Point Sheet.



TTOAS 24

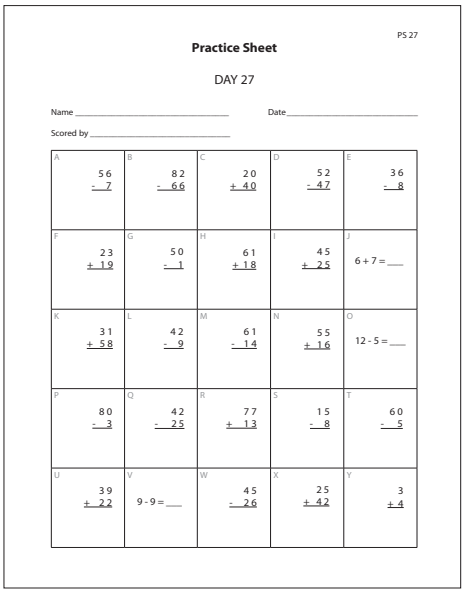
Time Owl Name: Score:

Answer all the **trading** problems.

~~13~~ - 9	32 + 29 = 61	~~10~~ - 3	~~47~~ - 45	36 + 48 = 84
91 - 66 = 25	~~8~~ + 9	~~54~~ + 24	81 - 33 = 48	~~34~~ + 25

For example, the direction for this Time Owl is "Answer all the trading/regrouping problems." Students answer all the problems that involve regrouping. They draw an X over problems that do not require regrouping.

The following are materials for each student *for the Practice part of the lesson.*



PS 27

Practice Sheet

DAY 27

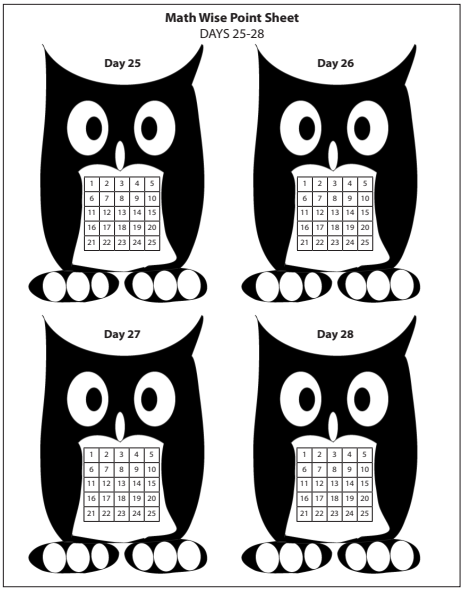
Name _____ Date _____

Scored by _____

A 56 - 7	B 82 - 66	C 20 + 40	D 52 - 47	E 36 - 8
F 23 + 19	G 50 - 1	H 61 + 18	I 45 + 25	J 6 + 7 = ___
K 31 + 58	L 42 - 9	M 61 - 14	N 55 + 16	O 12 - 5 = ___
P 80 - 3	Q 42 - 25	R 77 + 13	S 15 - 8	T 60 - 5
U 39 + 22	V 9 - 9 = ___	W 45 - 26	X 25 + 42	Y 3 + 4

Two copies of a 25-problem **Practice Sheet** are used: one for the Coach and one for the Player. Each student works on his/her own Practice Sheet for 5 minutes.

At the end of five minutes, students switch Practice Sheets and grade for correct answers. The teacher reads the answers from a teacher transparency (PAS = Practice Answer Sheet). Students circle correct answers and leave incorrect or blank answers alone.



Throughout Partner Work, the Coach and Player share a **Point Sheet**. Four days worth of Point Sheets are printed on a single page.

Teachers mark points on the Point Sheet for pairs who are following the Partner Rules.

Students mark points on the Point Sheet at the end of the TIme Owl and at the end of the Practice Sheet. The student pair with the highest number of points during a lesson collects the folders.

Organizing Student Materials

Math Wise materials are organized into folders with inside pockets. Two folders are stuffed to provide a pair with four days (i.e., two weeks) of materials.

Each pair shares a set of two folders. One folder is labeled "**Coach**"; the other folder is labeled "**Player**." The Player's folder is kept inside the Coach's folder, so the pair gets one set of folders to manage.

On the inside of both folders, label the left-hand pocket "**Coaching**." Label the right-hand pocket "**Practice**."

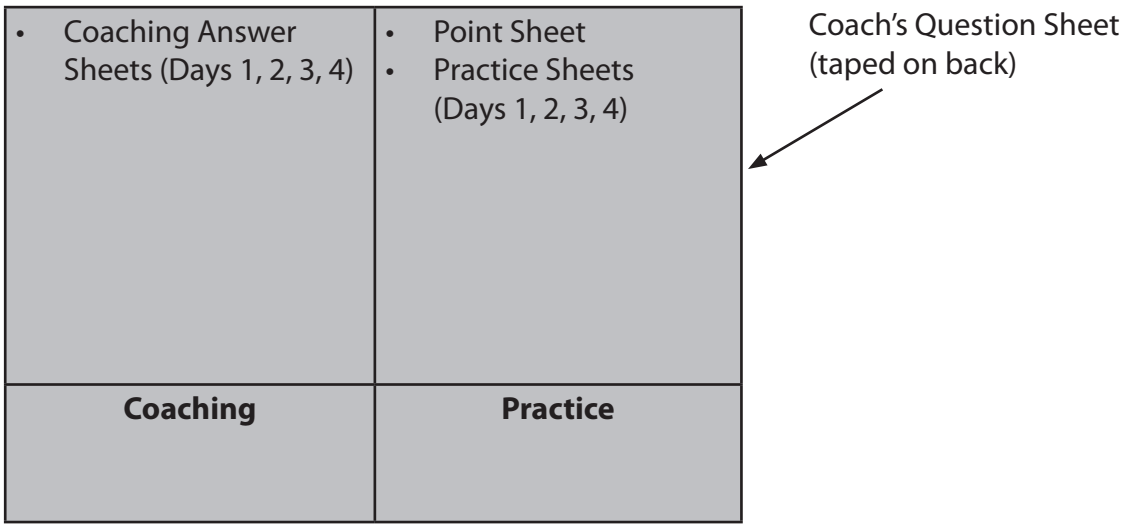
The materials from the Student Materials Handouts are organized in an order that makes stuffing the Coach and Player folders manageable and easy. If you copy the handouts in the same order as they are organized in the handouts package, follow these directions for stuffing the folders.

1. Tape **Coach's Question Sheet** on back of Coach folder.
2. Open Coach folder face up.
3. Place next 4 pages (**Coaching Answer Sheets** Days 1, 2, 3, 4) on Coaching side.
4. Place next 5 pages (**Point Sheet** and **Practice Sheets** Days 1, 2, 3, 4) on Practice side.
5. Open Player folder face up; place on top on Coach folder.
6. Place next 4 pages (**Coaching Sheets** Days 1, 2, 3, 4) on Coaching side.
7. Place last 4 pages (**Practice Sheets** Days 1, 2, 3, 4) on Practice side.
8. Close Coach folder with Player folder tucked inside.

See diagram on following page showing how materials are placed in folders.

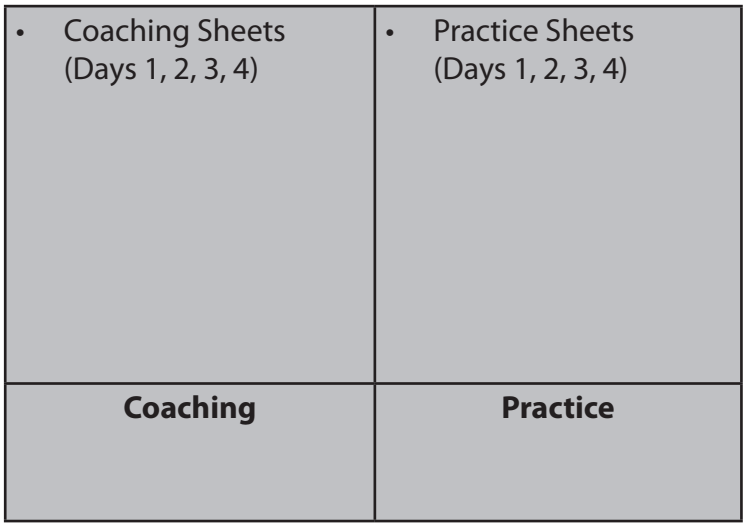
COACH'S FOLDER

- Tape a copy of the skill's **Coach's Question Sheet** to the back cover.
- In the inside left-hand pocket ("Coaching"), place copies of the skill's **Coaching Answer Sheet** for days 1, 2, 3, and 4.
- In the inside right-hand pocket ("Practice"), place a **Point Sheet** and copies of the skill's **Practice Sheets** for days 1, 2, 3, and 4.



PLAYER'S FOLDER

- In the inside left-hand pocket ("Coaching"), place copies of the skill's **Coaching Sheet** for days 1, 2, 3, and 4.
- In the inside right-hand pocket ("Practice"), place copies of the skill's **Practice Sheets** for days 1, 2, 3, and 4.



Note: Player's folders and Coach's folders are stuffed with identical Practice Sheets.

Other Materials

Teacher Materials

Five posters should be displayed in the classroom. Templates for the posters are included in this manual. Posters do not have to be large (11" x 14" is generally adequate).

- Partner Rules
- Counting Up Addition
- Count Up or Compute?
- Counting Up Subtraction
- Know It or Count Up

Two types of manipulatives are used in some lessons. These manipulatives can be purchased from a teacher supply store or a mathematics manipulatives company.

- Base-10 blocks - yellow and blue (approximately 15-20 rods and 20-30 units)
- $10 and $1 pseudo paper bills (approximately 10 $10 bills and 30 $1 bills)

A timer is needed for timing of the Time Owl and Practice Sheet.

To award students for working well together, the teacher can award "Partner of the Day" pencils. During Math Wise studies, engraved pencils with "Partner of the Day" were purchased from a novelty company. Any pencil or small prize will suffice.

Student Materials

Two-pocket folders will hold the materials for each lesson.

Students will also need pencils.

Pairing Students

For Coaching, pair each student with a partner. Use whatever assessment information is routinely available to you as the basis for formulating pairs and identifying which skill each pair should work on.

1. Rank order your students in terms of their overall mathematics skills.

2. Split the rank order in half and follow the following pairing scheme.

	First Coach	Second Coach
Pair 1	Student #1	Student #11
Pair 2	Student #2	Student #12
Pair 3	Student #3	Student #13
Pair 4	Student #4	Student #14
Pair 5	Student #5	Student #15
Pair 6	Student #6	Student #16
Pair 7	Student #7	Student #17
Pair 8	Student #8	Student #18
Pair 9	Student #9	Student #19
Pair 10	Student #10	Student #20

3. Reassign partners every 4-6 weeks.

Sometimes students are absent. Sometimes classrooms have uneven numbers of students. Before each lesson, ask students if any partners are missing. If so, try to place odd students into pairs that make sense. If you need to create a triad, have one student act as the "Coach" while the other two students alternate as "Players" on every other problem.

Teacher Lessons

The lessons include all information teachers need to implement Math Wise.

To implement Math Wise with fidelity (as conducted in the research used to validate Math Wise), it is essential that teachers teach each and every principle covered in all lessons. Some teachers study the lesson and prepare an outline; then, they use that outline to deliver the instruction in their own words. Other teachers, however, after studying the lesson, still rely heavily on the wording of the lesson to deliver the lesson. In either case, it is necessary to **study** the lesson before delivery. In all cases, you should deviate from the lesson to elaborate concepts your students do not seem to understand.

The Teacher Lessons begin on page 21. Each lesson has a list of materials teachers and students need for the lessons. Each lesson also uses the following guiding graphics to indicate when a poster, transparency, manipulative, or student material is necessary.

This graphic signals the teacher needs to use a **P**oster.

This graphic signals for the teacher to show a **T**ransparency.


This signals the teacher to use a manipulative (e.g., Base-10 blocks or $10 and $1 bills).

This graphic indicates students will use **C**oaching materials from the **C**oaching side of their folders.


This shows the teacher when students should be working together.

This indicates students will use **P**ractice materials from the **P**ractice side of their folders.


This signals the teacher to conduct a Time Owl.


This indicates the teacher to time an activity.


This shows the teacher when to award Partner of the Day pencils.

Lessons
1 - 34

Lesson 1

Today's Activities:

1. Teacher Lesson
   Instruction on the equal sign (=)
2. Partner work
   Introduce Partner Rules
   Learn to complete and grade Practice Sheet

MATERIALS

Posters:
Partner Rules

Transparencies:
T Partners
T 1
T Point Sheet 1-4
T PS 1 (PS = **P**ractice **S**heet)
T PAS 1-4 (PAS = **P**ractice **A**nswer **S**heet)

Manipulatives:
Crayons (up to 10)
Blue transparency blocks (up to 10)
Yellow transparency blocks (up to 10)

Worksheets:
PS 1 (1 for each student)

TEACHER LESSON

Hi! My name is _____, and this year, we'll work together on solving addition and subtraction math problems. We'll call this program *Math Wise*. By the end of the year, you'll be very wise in math!

Every day during *Math Wise*, you'll work with a partner. Here is the list of pairs.

Display T Partners.

Find your name. Look at the name next to your name. That person will be your partner during *Math Wise*. Look around the room to see if your partner is here today. Is anyone's partner absent?

If a partner is absent, assign the student to another student whose partner is absent, or assign him as the third student in a pair with a strong student.

Every day, before we start working on *Math Wise*, you'll move to sit with your partner. I'll ask you to move quickly and quietly. Don't move yet. I'll ask the people whose names are in the First Coach column to move. When it's time to move, bring a pencil with you. Right now, make sure you have a pencil.

Pause.

Now, if your name is in the First Coach column, stand up, push in your chair, and stand behind it.

Pause.

I want everyone who is standing to move to your partner and stand behind them. Move quickly and quietly.

With the help of the teacher, place the students in a seat next to their partner.

Now, during *Math Wise*, this is where you'll sit. Are there any questions? Remember where you're sitting because you'll sit here every time we do *Math Wise*.

At the beginning of *Math Wise*, I'll teach a lesson. Some days I'll teach you new things. Some days I'll review things you've already learned. When I teach, you sit quietly and pay attention.

Sometimes, I'll ask questions. When I ask a question, you think about the answer. When you think you know the answer, raise your hand. I'll call on students who raise their hand. Let's practice.

What color is my shirt?

Call on a student sitting quietly and raising his hand.

_____.

Very good. I called on _____ because (s)he was sitting quietly and raising his/her hand.

Sometimes I might ask a question, and I want the whole class to answer. When I want the whole class to answer, I will say, "Everybody." Then everyone will say the answer together. Let's practice.

How many fingers am I holding up? (Hold up 3 fingers.) **"Everybody?"**

Students call out the answer.

3!

Good. When I say "Everybody," I want the whole class to say the answer together. Don't yell. Say the answer in your normal voice.

Let's get started with the *Math Wise* lesson! First, let's look at the signs we use in math problems. In a math problem, do we see letters or numbers? Everybody?

A math problem uses numbers.

A math problem asks you to add or subtract numbers. Look at this first sign.

Display T 1.

What's this sign? (Point to A.)

Plus sign.

Yes, this is a plus sign. A plus sign (point) **tells us to add numbers together.**

In this problem (point to B), **we add 2 plus 3. What's 2 plus 3?**

5.

Yes. 2 plus 3 is 5. We combine the number 2 and the number 3 to get the total, 5.

What's this sign, everybody? (Point to A.)

A plus sign.

What do you do when you see a plus sign, everybody?

Add.

Now, look at this sign. (Point to C.) **What is this sign?**

A minus sign.

Yes, this is a minus sign. When we see the minus sign (point), **we subtract or take away one number from another. You can call the minus sign the take away sign or the subtraction sign, but during *Math Wise* we'll call this sign** (point) **the minus sign. What will we call this sign, everybody?**

The minus sign.

What do you do when you see the minus sign, everybody?

You subtract or take away.

So, look at this problem. (Point to D.) **This says 5 minus 4. The minus sign tells me I'll take away 4 from 5. What's 5 minus 4?**

1.

Yes, 5 minus 4 is 1.

Now, look at this sign here. (Point to E.) **This is the equal sign. The equal sign means *the same as.* When you see the equal sign in a number sentence, people say *equals* or *the same as.* When you see this sign** (point to equal sign), **what do people say?**

Equals or the same as.

Most of the time when you see the equal sign, <u>you</u> probably say *equals*. That's okay. The equal sign means *equals,* but the equal sign also means *the same as. The same as* means the same thing as *equals*. I'd like you to say *the same as* when you see the equal sign, but if you say *equals*, that's okay too.

You can think about it like this. A person who is your buddy can also be called your pal or your friend. Buddy, pal, and friend all mean the same thing just like *equals* and *the same as* mean the same thing.

When you talk to your Mom, you might call her Mommy, Mom, or Mama. Those words all mean the same thing just like *the same as* and *equals* mean the same thing. Now, your Mom may like you to call her Mommy. If you call her Mom, that's okay, but Mommy is better. That's just like with the equal sign. When you see the equal sign, try to remember to say *the same as*. Saying t*he same as* helps you remember what the equal sign means.

Now, every number sentence has two *sides*. Look at this number sentence. (Point to F.) **A number sentence is anything with an equal sign. One side is here on this side of the equal sign** (point)**. The other side is here, on that side of the equal sign** (point)**.**

Your job is to check if this side (point to left side) **is *the same as*** (point to equal sign) **that side** (point to right side.)

Let's look at some problems that use these crayons.

Place 3 crayons on left side of equal sign at bottom of page.
Place 3 crayons on right side of equal sign at bottom of page.

Let's check that this side is the same as that side.

On this side of the equal sign (point to left side), **there are 1, 2, 3 crayons** (touch each crayon). **On that side of the equal sign** (point to right side), **there are 1, 2, 3 crayons** (touch each crayon). **Is this side** (point to left) **the same as that side** (point to right)**?**

Yes.

Yes, the two sides are the same.

Let's clear the crayons and try another one.

Place 5 crayons on left side and 5 crayons on right side.

Let's check if one side *is the same as* the other side.

Count the crayons on this side (point to left side). **How many crayons, everybody?**

5.

Yes, there are 1, 2, 3, 4, 5 crayons. Now, count the crayons on that side (point to right side). **How many crayons?**

5.

Yes, there are 1, 2, 3, 4, 5 crayons. Is this side (point to left) **the same as that side** (point to right)**? Are the sides the same?**

Yes.

Yes, the two sides are the same, so we can use the equal sign.

Let's try another one.

Place 6 crayons on left side and 4 crayons on right side.

Let's check if the sides are the same.

Count the crayons on this side (point to left side). **There are 1, 2, 3, 4, 5, 6 crayons. Now, count the crayons on that side** (point to right side). **There are 1, 2, 3, 4 crayons. Is this side** (point to left) **the same as that side** (point to right)**?**

No.

The sides are NOT the same. 6 is NOT the same as 4, so this example is wrong. We can't use the equal sign because the sides are not the same.

Take crayons off transparency immediately.

Let's try another one.

Place 2 crayons on left side and 2 crayons on right side.

Is this side (point) **the same as that side** (point)**?**

Yes.

Why?

Because the same number of crayons is on both sides of the equal sign.

Yes. This side has 2 crayons (point), **and that side has 2 crayons** (point). **The sides are the same. We can use the equal sign. This example is correct.**

Try this one.

Place 3 crayons on left side and 5 crayons on right side.

Is this side (point) **the same as this side** (point)**? Why or why not?**

No. The number of crayons on each side is not the same.

This side has 3 crayons (point), **and that side has 5 crayons** (point). **These sides are NOT the same. This example is wrong. We can't use the equal sign because the sides are not the same.**

Take crayons off transparency immediately.

Let's look at another problem. This time, instead of using crayons, we'll use these blue and yellow blocks.

Place 2 yellow blocks and 3 blue blocks on the left side.
Place 5 blue blocks on the right side.

Look here. There are 1, 2, 3, 4, 5 blocks on the left side (point). **There are 1, 2, 3, 4, 5 blocks on the right side** (point). **Is this side** (point) ***the same as*** **that side** (point)**?**

Yes.

Yes, the two sides are the same. Now, look at this number sentence. (Point to G.) **Remember, every number sentence has two sides. One side is on the left of the equal sign** (point). **This other side is on the right of the equal sign** (point).

This number sentence says 2 plus 3 *is the same as* 5. It's just like the problem with the blocks. The 2 stands for the number of yellow blocks. The 3 stands for the number of blue blocks.

When we see a plus sign (point)**, what do we do?**

Add the numbers together.

When we add, we combine numbers together to make a bigger number. In this problem, 2 plus 3 is 5. When we combine the numbers on this side (point)**, the answer *is the same as* the number on that side** (point).

When you read a number sentence, don't read the number sentence like this: 2 plus 3 equals 5. Instead, say 2 plus 3 *is the same as* 5. Let's say that together: 2 plus 3 *is the same as* 5. Let's say it again: 2 plus 3 *is the same as* 5. Say it on your own three times.

2 plus 3 is the same as 5.
2 plus 3 is the same as 5.
2 plus 3 is the same as 5.

Good work! Remember, when we see a plus sign, we combine the numbers by adding. When we add numbers together on one side of the equal sign, the total should be *the same as* the number on the other side of the equal sign.

Let's do another problem. (Point to H.) **This number sentence says 4 plus 2 *is the same as* blank. What do we need to do when we see a plus sign?**

Add.

Yes, add or combine the numbers to make a bigger number. Let's add to find out what number goes in the blank box so the sides will be the same.

Watch. I'll use blocks to help us figure out what number is the same as 4 plus 2.

Place 4 yellow blocks and 2 blue blocks on the overhead.

Let's count together. (Point as you count.) **There are 1, 2, 3, 4, 5, 6 blocks on this side of the equal sign** (point)**. How many blocks should I put on that side** (point)**?**

6.

OK, I'll put 6 blocks on that side.

Place 6 blocks on that side of the equal sign.

Are the sides the same?

Yes.

Yes, they're the same. To complete the number sentence, I'll write 6 on the line.

Write 6.

Let's read it together. 4 plus 2 *is the same as* 6.

Let's try another one. (Point to l.) **Let's read this number sentence together: 5 minus 1*is the same as* 4. This number has a minus sign. What does the minus sign tell us to do?**

Take away or subtract.

The minus sign tells us to subtract the numbers on this side of the equal sign (point)**.**

Let's use blocks to check whether 5 minus 1 is the same as 4. I start by putting 5 yellow blocks on this side of the equal sign (point)**. The minus sign tells me to take 1 block away. I'll do that in a minute. Then, I put 4 blue blocks on that side** (point) **of the equal sign.**

Arrange blocks.

Okay, I've got 5 blocks on this side of the equal sign, but I need to take 1 away because the number sentence says *minus 1*. The minus sign means to take away.

Remove 1 block.

The number I have left is the difference between the 5 and 1.

Now, how many blocks do we have on this side of the equal sign (point)**?**

4.

Is 4 the same as the number of blocks we have on that side of the equal sign (point)**?**

Yes.

Yes, you're right. There are 4 blocks on this side and 4 blocks on that side of the equal sign, so the sides are the same. Can we use the equal sign?

Sure!

You're right, the numbers are the same, so we can use the equal sign. Here's another problem. (Point to J.) **Let's read it together. 6 minus 2 *is the same as* blank. What does the minus sign tell us to do?**

Take away or subtract.

Yes, when we subtract, we take away the number after the minus sign (point) **from the number you start with** (point). **The answer should be the same as the number on that side** (point) **of the equal sign.**

We find out what number goes in the blank to make the sides the same. Let's use blocks to help us figure it out.

Arrange 6 yellow blocks on this side of the sign.

How many blocks should I take away?

2.

Good, I'll take away 2 blocks. How many are left?

4.

That's right, 4. So how many blocks should I put on that side to make the sides the same?

4.

Very good. I'll put 4 blocks on that side.

Arrange 4 blue blocks under the blank box.

I'll also write a 4 on the line to complete the number sentence.

Write 4.

Let's read it together. 6 minus 2 *is the same as* 4.

Remember, always look at both sides of the equal sign to check: Is this side *the same as* that side? If the sides are not the same, you cannot use the equal sign. Every time you write a number sentence with the equal sign, ask yourself, "Is this side *the same as* that side?" By checking if the sides are the same, you'll get better in math!

Now, there's one more thing I want to mention. Sometimes, we see the equal sign written like this. (Point to E.) **But other times, we see the equal sign written like this.** (Point to K.)

In this problem, 8 minus 4, the numbers are written top to bottom (point) **instead of left to right** (point)**. When a problem is written top to bottom like this** (point), **the problem uses an equal line like this** (point) **to stand for an equal sign. It still means *the same as*. So, we'd read this problem as 8 minus 4 is the same as blank. What's 8 minus 4?**

4.

Very good. So, 8 minus 4 is the same as 4.

Look at this problem. (Point to L.) **How do you read this problem?**

2 plus 5 is the same as blank.

Very nice. Instead of the equal sign, this problem uses the equal line. You still read it as *the same as*. So, 2 plus 5 is the same as blank. What's 2 plus 5?

7.

That's right. 2 plus 5 is the same as blank.

We'll see the equal line more and more as we solve harder math problems. But remember, the equal sign and the equal line are the same.

PARTNER WORK

In *Math Wise*, after I teach a lesson to the whole class, you'll work with your partner. This activity will be called PALS. We call our partner work PALS because we want you to become Math Wise PALS. We'll learn how to do PALS in a few days.

Today, let's talk about rules for PALS. During PALS, there are four rules to follow. These are our *Math Wise* PALS Rules.

Display Partner Rules poster.

Let's look at the first rule. "Talk only to your partner, and talk only about math." This rule means you only talk to your partner. Talking to a student across the room is <u>not</u> talking only to your partner. This rule also means that you talk only about math. Talking about lunch or what you did last night is <u>not</u> talking about math.

What's the first rule, everybody?

Talk only to your partner, and talk only about math.

Look at rule #2. "Be on task." Being on task means working with your partner on the problems I ask you to work on. You're <u>not</u> on task if you're reading from a book or doing science homework.

What's the second rule, everybody?

Be on task.

Rule #3. "Be nice and helpful." Being nice and helpful means supporting your partner and helping your partner whenever they have a question. Being mean to your partner, doing their work for them, or ignoring them is <u>not</u> being nice and helpful.

What's the third rule, everybody?

Be nice and helpful.

Look at rule #4. "Use a soft voice." During PALS, everyone will be talking to their partner. It's important to use a very soft voice (demonstrate) **so everyone can work at the same time. If you are talking loud or yelling, you are <u>not</u> using a soft PALS voice.**

What's the fourth rule, everybody?

Use a soft voice.

When you do PALS, I look and listen for good partner work. Partners who are talking only to their partner, talking only about math, being on task, being nice and helpful, and using a soft voice will earn extra points on a Point Sheet.

Display T Point Sheet 1-4.

This is a Point Sheet. If we're working on Day 1, I mark points on the Day 1 owl. (Point.) **If we're working on Day 2, I mark points on the Day 2 owl.** (Point.)

Today is Day 1, so I would mark points here. (Point.) **Let's say I see partners talking only to their partner, I might give those partners two points.** (Mark two slashes.) **If I see partners using a soft voice, I might give those partners two points.** (Mark two slashes.) **If I see partners following all the rules at the same time, I might give those partners five points!** (Mark five slashes.)

At the end of each day, the partners with the most points will be my special helpers. During PALS, only I mark points. If I see you marking points, I will take your Point Sheet away.

Let's review the PALS Rules one more time.

Talk only to your partner, and talk only about math.
Be on task.
Be nice and helpful.
Use a soft voice.

Great work! At the end of every PALS lesson, you will do a Practice Sheet on your own.

Display T PS 1.

Your Practice Sheet looks like this. Each of you will get your own Practice Sheet.

Pass out PS 1 (one copy for each student).

Write your name and today's date at the top. When you've finished, turn your paper face down.

Allow students to write name and date.

When I say, "Begin," everyone will turn their sheet over and work the problems on their Practice Sheet. When I say, "Stop," put your pencil down.

Okay. Let's try it. Begin.

Time for 5 minutes.

Stop. Give your Practice Sheet to your partner.

Allow students to switch Practice Sheets.

Write your name besides "Scored by" to show you're the one scoring the Practice Sheet.

Now, look up here.

You will score your partner's paper in a minute. Let me show you what I mean.

Display T PS 1.

If your partner answered problem A correctly, you will draw a circle around the entire problem. (Draw circle.) **You do not need to circle each digit. If your partner answered problem B correctly, you will draw a circle around it.** (Draw circle.) **If your partner answered problem C incorrectly, leave it alone. Do not draw an X or mark it out. Leave it the way it is. If your partner did not answer problem D, leave it alone. Don't put anything around it.**

Display T PAS 1-4.

This is a Practice Answer Sheet. Now, you'll score each other's paper. Remember, if the answer is correct, circle the whole problem. If the answer is incorrect, don't put anything around it – just leave it the way it is. If there's no answer, just skip it.

I'll read each answer. If it's correct, circle it. A: 15, B: 7….

Allow students to score Practice Sheets.

Now, count the number of correct answers (or the number of circles). Write that number at the top of the Practice Sheet and circle it. This is your partner's score. Let's say my partner got 15 correct answers or circles, I would write 15 at the top and circle it. Do this now.

Allow students to write score on Practice Sheets.

Good job. Pretty soon I'll show you how to earn points from your Practice Sheets.

Collect Practice Sheets.

Now it's time to award the *Math Wise Partner of the Day* pencils. Today, (Student) and (Student) earn a pencil because they followed the *Math Wise* rules and worked well together. I especially like how they (praise a behavior). Remember, every time we do *Math Wise*, I'm looking and listening for partners following the rules.

Nice job working hard during *Math Wise* today! I'll see you on (say day of next lesson).

Lesson 2

Today's Activities:

1. Teacher Lesson
   Counting up addition
2. Partner work
   Introduce Coach's Question Sheet
   Complete Practice Sheet

MATERIALS

Posters:
Number line (0-20)
Partner Rules
Counting Up Addition

Transparencies:
T Partners
T 2
T CS 2
T CQS 1-4 (CQS = **C**oach's **Q**uestion **S**heet)
T PAS 1-4

Manipulatives:
Clothespin

Worksheets:
CQS 1-4 (on back of PALS folder)
PS 2 (1 for each student)

TEACHER LESSON

It's time for *Math Wise.* Move to your *Math Wise* seats.

If students can't remember their partner or seat, refer to T Partners.

Let's get started. Today, we'll learn how to use this number line and our fingers to add.

Look at the number line.

Display Number Line.

Have you ever seen a number line before?

Yes.

This number line starts at 0 (point to 0) **and goes up to 20** (point to 20). **Each notch along the number line has one number on it.** (Point to numbers.) **Let's count the numbers now, starting with zero.**

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20.

Now, let's look at some addition problems and use the number line to find the answers.

Display T 2.

What sign shows us to add?

A plus sign.

That's right. A plus sign tells us to add. (Point to A.) **When we add, we combine two or more numbers together. What sign means the same as?**

The equal sign.

Very nice. The equal sign means the same as. (Point to B.) **Whenever you read a number sentence, you should say *the same as*. Don't say equals.**

The problems we'll work on today have two numbers you add together. One of the numbers is the *bigger number.* One of the numbers is the *smaller number.*

Look at this first problem. (Point to C.) **This problem says 5 plus 3 is the same as blank. We can use our number line to solve a math problem like this. I'll put this clothespin on the bigger number. Which number is bigger, 5 or 3?**

5.

That's right, 5 is the bigger number. I'll put the clothespin on 5.

Place clothespin on 5.

Once the clothespin is on the bigger number, don't move it. This problem says 5 plus 3, so you add 3. To add 3, jump up 3 more numbers on the number line. I start on 5, and use my finger to jump up 3 numbers. 6 (hold up 1 finger; use finger on other hand to move up on number line from 5 to 6)**, 7** (hold up 2 fingers; use finger to move up to 7)**, 8** (hold up 3 fingers; use finger to move up to 8)**. So, 5 plus 3 is the same as what?**

8.

Yes! The answer is the last number you say. Put 5 in your fist (hold up fist)**; then count 3 more: 6, 7, 8.** (Point to number line for each successive number and hold up an additional finger with each jump.) **8, the last number you say, is the answer. 8 are *more* than 5.**

Write 8.

When you add, you move this way, *up* the number line (use your finger to move in a positive direction on the number line) **toward the bigger numbers. In an addition problem, your answer is *more* than each of the numbers you add together.**

Now, be careful! When you're jumping up the number line, don't count the number the clothespin is already on. Jump up to the next higher number. Let's practice counting up the number line.

Look at this problem. (Point to D.) **4 plus 2 is the same as blank. I put the clothespin on which number?**

4.

Right. We put the clothespin on the bigger number, 4.

Place clothespin on 4.

How many do we count up?

2.

Let's practice counting up from 4. Count up 2 more numbers. I'll put my finger on 4. I'll jump up to the next higher number and say, "5." Then, I'll jump up to the next number and say, "6."

You jump up two numbers and the last number you say is 6. So, 4 plus 2 is the same as 6. 6 is *more* than 4. 6 is also *more* than 2. When you add, you move *up* the number line (use your finger to demonstrate on the number line) **toward the bigger numbers. In an addition problem, your answer is always *more* than each of the numbers you add together.**

We don't need a number line to count up for adding. You can use your fingers instead. We call this "counting up." Sometimes when you add two numbers together, you know the answer right away in your brain, and that's great! But sometimes, we don't know the answer right away. Counting up is a neat trick to help you figure out the answer quickly.

Look at this poster.

Display Counting Up Addition poster.

This poster shows the three steps to counting up for adding. Let's use these steps to solve 4 plus 2 is the same as blank. (Point to D.)

The first step says, "Put the bigger number in your fist and say it." (Point to Step 1.) **Which number is the bigger number?**

4.

That's right! Start with the bigger number, 4. Put that number in your fist and say, "4."

Tap closed fist on leg and say, "4."

Look at Step 2. (Point to Step 2.) **Step 2 says, "Count up the smaller number on your fingers." Now, count up 2 more, and use your fingers to keep track of how many you're adding. Watch me. I put the bigger number in my fist, 4** (tap closed fist on leg), **5** (hold up 1 finger)**, 6** (hold up 2 fingers)**. I knew I had to add 2 more to 4** (point to "+ 2")**. I used my fingers to make sure I counted up exactly 2 more** (show students the 2 fingers still held up)**.**

Now look at Step 3. (Point to Step 3.) **Step 3 says, "Your answer is the last number you say." Watch: I put the bigger number in my fist, 4** (tap closed fist on leg), **5** (hold up 1 finger)**, 6** (hold up 2 fingers)**. What was the last number I said out loud?**

6.

So, what's the answer to 4 plus 2?

6.

That's right! 4 plus 2 is the same as 6.

Write 6.

Just like the number line, be careful! When you count up with your fingers, don't put a finger up for the number you start with. That number goes in your fist. You have to <u>add</u> more fingers!

Watch me. I'll practice this problem. (Point to E.) **7 plus 3 is the same as blank. I put the bigger number, 7, in my fist.** (Tap closed fist on leg and say, "7.") **Then I count up 3 more. Watch: 8** (hold up 1 finger)**, 9** (hold up 2 fingers)**, 10** (hold up 3 fingers)**. 10 is the last number I say. That's the answer.**

Write 10.

I use my fingers to keep track of how many I add. So, 7 plus 3 is the same as 10. 10 is *more* than 7 and *more* than 3. Your answer is always more than each of the numbers you add together.

Before we solve the next problem, I want to tell you something cool about addition problems. In addition problems, you always start with the bigger number. It doesn't matter whether the bigger number is here (point to 7 of 7 + 3) **or here** (point to 3 of 7 + 3). **You always start with the bigger number. What number do you always start with?**

The bigger number.

That's right! For addition problems, you always start with the bigger number.

Now, let's practice counting up together. Look at this problem. (Point to F.) **This problem says 3 plus 4 is the same as blank. In this problem, the bigger number, 4, doesn't come first. You still solve the problem the same way, though.**

What number do you put in your fist?

4.

Yes, put the 4 in your fist.

(Students tap closed fist on leg and say,) 4.

How many do you count up?

3.

So, count up 3 more.

5 (students hold up 1 finger), 6 (students hold up 2 fingers), 7 (students hold up 3 fingers).

So, what's 3 plus 4?

7.

Yes, 7 was the last number you said. So, 7 is the answer. 3 plus 4 is the same as 7.

Write 7.

Let's try this problem. (Point to G.) **6 plus 4 is the same as blank. Count up this problem with your partner.**

(Students count up.)

Who can show us counting up 6 plus 4?

(Student demonstrates.)

Very good. (Count up 6 plus 4.) **6 plus 4 is the same as 10.**

Write 10.

Try another problem. (Point to H.) **This problem says 5 plus 8 is the same as blank. This is an addition problem, so the answer is more than each of the numbers you add together. Try counting up 5 plus 8 with your partner.**

(Students count up.)

Who can show us counting up 5 plus 8?

(Student demonstrates.)

Great. (Count up 5 plus 8.) **5 plus 8 is the same as 13.**

Write 13.

Try this with your partner. (Point to I.) **This problem says 7 plus 6 is the same as blank.**

(Students count up.)

Who can show us counting up 7 plus 6?

(Student demonstrates.)

Awesome. (Count up 7 plus 6.) **7 plus 6 is the same as 13.**

Write 13.

Try one more problem with your partner. (Point to J.) **Read the problem with your partner and then count up.**

(Students count up.)

Who can count up 8 plus 9?

(Student demonstrates.)

Yes! (Count up 8 plus 9.) **8 plus 9 is the same as 17.**

Write 17.

PARTNER WORK

In *Math Wise*, after I teach a lesson to the whole class, you'll work with your partner. We call this activity PALS. We want you to become Math Wise PALS. We'll start learning about PALS today.

During PALS, there are four rules to follow. Let's review the four Partner Rules.

Display Partner Rules poster.

Let's look at the first rule. "Talk only to your partner, and talk only about math." How could you follow this rule?

(Student gives example.)

Rule #2. "Be on task." How could you follow this rule?

(Student gives example.)

Rule #3. "Be nice and helpful." How could you follow this rule?

(Student gives example.)

Rule #4. "Use a soft voice." How could you show us this rule?

(Student gives example.)

Remember, when you do PALS, I look and listen for good partner work. Partners who are talking only to their partner, talking only about math, being on task, being nice and helpful, and using a soft voice will be the *Partners of the Day*. I have a special pencil for both partners.

Let's get started with PALS. Over the next few days, I'll explain PALS.

Write "PALS" on board.

I not only want you to become better at math, I also want you to learn how to work together in a friendly, helpful way.

There are two jobs in PALS. One job is called *Coach* (write "Coach" on board)**; the other job is called *Player*** (write "Player" on board)**. The Coach and the Player are both very important jobs. You will do both of these jobs each day of PALS. For PALS to work, both jobs must be done well.**

In PALS, what are the two jobs?

Coach and Player.

That's right, the Coach and the Player. First, let's talk about the job of *Coach*. (Point to "Coach.")

Being a Coach is very important. When you are the Coach, you must be helpful, patient, and fair. You must pay careful attention during PALS and help the Player when he doesn't know the answer. You should also let the Player know when he does well. And finally, when you're the Coach, you must follow the directions for PALS.

Who can tell me what you should do to be a good Coach?

(Students respond with answers.)

Good. It's very important to give the Player lots of chances to ask or answer questions. A good Coach not only helps the Player work through problems, he also makes sure the Player really understands what to do. The Coach should not tell the Player the answer and do the work for him. The Coach should *help* the Player work through the problem. Should the Coach tell the Player all the answers and work the problems for him, everybody?

No.

That's right. The Coach should make sure the Player is paying attention and getting lots of chances to learn and work through the problems himself.

Now, let's talk about the job of *Player*. (Point to "Player.) **Being a Player is also very important. When you are the Player you must try your best, pay careful attention to the Coach, and follow directions for PALS. A Player should also ask for help whenever he needs it. OK. What are some things a good Player should do?**

(Students respond with answers.)

You could think about the Coach and Player roles like a Coach and Player on a football team. The Coach is always watching the Player, giving the Player helpful hints, and being helpful. The Coach isn't sitting on the sideline eating popcorn and drinking cola. On a football team, the Player is listening to the Coach and following the Coach's directions. The Player isn't doing whatever he wants and ignoring the Coach.

I'll teach you how you can do all of the PALS activities without my help. However, during PALS, if you have any questions or a problem you can't answer, raise your hand just like this.

Demonstrate raising hand.

Then, wait quietly for me to come to your desk. What do you do if you have a question you can't answer?

Raise our hands and wait quietly for you to come to our desk.

Now, I'll explain how PALS works. Each day you and your partner will work step-by-step on one type of math problem. Let me show you what I mean by working "step-by-step."

I'll be the Coach, and (Student) will be the Player. We'll work through the first two problems on the overhead. (Student) will do one problem correctly and will make a mistake on the other problem.

Display T CS 2.

Look at this problem. (Point to 5 + 8.) **Answer this problem correctly.**
Look at this sign. (Point to + sign.) **Do you add or subtract?**

Add.

Good. What plus what?

5 plus 8.

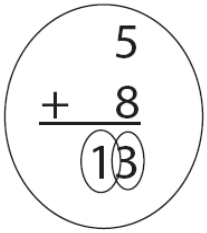
What's 5 plus 8? If you don't know the answer, count up.

13.

Write your answer.

(Student writes 13.)

Circle the 1 of 13. Circle the 3 of 13. Draw a big circle around the entire problem.



What did I do as the Coach?

(Students respond with answer.)

That's right. I asked the Player questions. I was nice to the Player. I didn't tell the Player the answer.

What did I do to the Player's work?

Circled it.

Yes. I circled each digit the Player answered correctly. (Point to circles.) **When you're the Coach, you'll check *<u>each digit</u>* the Player writes on the Coaching Sheet. A digit is each number in the answer.**

Write 27 on board.

For example, in the number 27 there are two digits. The number 7 is a digit. (Point to 7.) **The number 2 is a digit.** (Point to 2.) **The Coach would check both the 7 and the 2.**

Write 1978 on board.

How many digits are in this answer?

4.

That's right. There are four digits: 8 (point)**, 7** (point)**, 9** (point)**, and 1** (point)**. The Coach would check each of the four digits or numbers in the answer.**

On this problem (point to 5 + 8), **I also circled the entire problem.** (Point to large circle.) **I circled the entire problem because all the digits were answered correctly.**

Let's do another problem. This time, the Player will answer this problem incorrectly.

Whisper to "Player" to write 12 as the answer to this problem.

Look here. (Point to 6 + 4.) **Look at this sign. Do you add or subtract?**

Add.

Very good. What plus what?

6 plus 4.

What's 6 plus 4? If you don't know the answer, count up. Put the bigger number in your fist, count up the smaller number on your fingers, and your answer is the last number you say.

10.

Great. Write your answer.

(Student writes incorrect answer.)

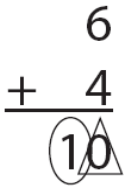
Look here. You told me that 6 plus 4 is the same as 10. But you wrote 12. So, erase this 2. What number should you write to make 10?

0.

Yes. Go ahead and write 0 now. Now our answer is 10.

(Student.)

Circle the 1 of 10. Triangle the 0 of 10. DO NOT circle the entire problem.



What are some of the things I did as the Coach?

(Students respond with answers.)

Yes. I asked questions to the Player. I was nice. When the Player made a mistake, I helped her fix it. Then, I drew a triangle around the digit that was wrong at first. (Point to triangle.) **I drew a circle around the digit that was answered correctly.** (Point to circle.)

On this problem (point to 5 + 8), **I drew a circle around the entire problem because all the digits were answered correctly.**

On this problem (point to 6 + 4), **I did not draw a circle around the entire problem because all the digits were not answered correctly at first.**

The next step is very important. During Coaching, you must have a folder. Let's look at the folders now.

Hold up folders.

One folder says *Coach* and the other says *Player*.

Point out label at upper right corner.

On the back of the Coach folder, there are questions the Coach will ask the Player.

I will pass out a folder to you and your partner so you can read the Coach's questions.

Pass out folder to each pair.

Look at the Coach's Question Sheet on the back of the Coach's folder.

Display T CQS 1-4.

The Coach will ask each question, starting with the box at the top. The Player will answer each question aloud and work that part of the problem.

Let's read through the questions so you know what to ask as the Coach. Read with me.

Look at the sign.

Add or subtract?

Count up or compute?

Now, we just learned about counting up. We'll learn about computing in a few weeks. These problems are all counting up problems. So, what should the Player say?

Count up.

What plus what?

What's your answer?

Write it.

Next time, you'll practice Coaching and the Coach will ask these questions to the Player.

At the end of every PALS lesson, you will do a Practice Sheet on your own.

Pass out PS 2.

Write your name and today's date at the top. When you've finished, turn your paper face down.

Allow students to write name and date.

When I say, "Begin," everyone will turn their sheet over and work the problems on their Practice Sheet. When I say, "Stop," put your pencil down.

Okay. Let's try it. Begin.

Time for 5 minutes.

Stop. Give your Practice Sheet to your partner.

Allow students to switch Practice Sheets.

Write your name besides "Scored by" to show you're the one scoring the Practice Sheet.

Now, look up here.

Display T PAS 1-4.

This is a Practice Answer Sheet. Now, you'll score each other's paper. If the answer is correct, circle the whole problem. If the answer is incorrect, don't put anything around it – just leave it the way it is. If there's no answer, just skip it.

I'll read each answer. If it's correct, circle it. A …

Allow students to score Practice Sheets.

Now, count the number of correct answers (or the number of circles). Write that number at the top of the Practice Sheet and circle it. This is your partner's score. Let's say my partner got 15 correct answers or circles, I would write 15 at the top and circle it. Do this now.

Allow students to write score on Practice Sheets.

Good job. Pretty soon I'll show you how to earn points from your Practice Sheets.

Collect Practice Sheets.

See Activity Guide: Partner Pencils.

Lesson 13

Today's Activities:

1. Teacher Lesson
   Counting up subtraction
2. Partner work
   Coaching
   Practice

MATERIALS

Posters:
- Number line
- Partner Rules
- Counting Up Addition
- Counting Up Subtraction

Transparencies:
- T Partners
- T 13
- T CQS 13-16
- T PAS 13-16

Manipulatives:
- Clothespins

Worksheets in PALS folders:
- CQS 13-16
- CS 13
- CAS 13
- Point Sheet 13-16
- PS 13

TEACHER LESSON

It's time for *Math Wise.* Move to your *Math Wise* seats.

If students can't remember their partner or seat, refer to T Partners.

We're very Math Wise at counting up addition problems. Today, we'll learn how to count up subtraction problems.

Display T 13.

Look at this sign. (Point to A.) **This is a minus sign. A minus sign tells us to subtract. When we subtract, we start with a number. Then we take some away. What sign shows us to subtract?**

A minus sign.

Now, think back. What sign means the same as?

The equal sign.

Very nice. The equal sign (point to B) **means the same as. Whenever you read a number sentence, you should say *the same as*. Don't say equals.**

Here's a subtraction problem. (Point to C.) **The subtraction problems we'll work on today have two numbers. One number is the *number you start with*. We call the other number the *minus number.***

The number you start with is the first number in the number sentence. In this problem, 9 minus 4, the number you start with is 9.

The minus number is the number after the minus sign. What number is after the minus sign (point)**?**

4.

Yes. 4 is after the minus sign. So, it's the minus number.

Look at this problem. (Point to D.) **It's the same numbers, but this time it's written up and down. So, 9 minus 4. What's the number you start with?**

9.

What's the minus number?

4.

Good. Look at this problem. (Point to E.) **8 minus 2. What's the number you start with?**

8.

What's the minus number? What number is after the minus sign (point)**?**

2.

Nice work! Look at this problem. (Point to F.) **15 minus 8. What's the number you start with?**

15.

What's the minus number?

8.

Yes. 15 is the number you start with. 8 is the minus number. 8 is the number after the minus sign.

Look at this problem again. (Point to C.) **9 minus 4 is the same as blank.**

Display Number Line.

We can use our number line to solve a subtraction problem like this. I put the clothespin on the number you start with. In this problem, the number you start with is 9. I put the clothespin on 9.

Place clothespin on 9.

Once the clothespin is on the number you start with, don't move it. This problem says 9 <u>minus</u> 4. The minus number comes right after the minus sign. So, 4 is the minus number. I take away the minus number. So I take away 4. On the number line, I could take away 4 by going back four spaces on the number line, but let's try something different.

When we subtract, let's find the difference between two numbers. Let me show you what I mean.

This problem says 9 <u>minus</u> 4. So, we find the difference between 9 and 4. I already have a clothespin on 9. I'll put another clothespin on the minus number. In this problem, the minus number is 4. It's the number right after the minus sign. I put the other clothespin on 4.

Place clothespin on 4.

To figure out how much the difference between 9 and 4 is, I start on the minus number, 4, and count up to 9. The number of jumps is the difference between 9 and 4. The number of jumps is my answer. So, say 4 (point to 4) **and then start counting. Use your fingers to keep track. I say 4, then I count: 5** (move finger to 5 and hold up 1 finger), **6** (move finger to 6 and hold up 2 fingers), **7** (move finger to 7 and hold up 3 fingers), **8** (move finger to 8 and hold up 4 fingers), **9** (move finger to 9 and hold up 5 fingers). **How many fingers am I holding up?**

5.

That's right. When you subtract, the answer is the number of fingers you're holding up. So, 9 minus 4 is the same as 5.

Write 5.

Some of you may want to start on 9 and count backward. That works okay, but sometimes it's hard to count backward, and it's easy to make a mistake. If you count up a subtraction problem to find the difference between the start number and the minus number, like I just showed you, it's much easier and you won't make as many mistakes. It will help you become Math Wise!

We don't need a number line to count up for subtraction. You can use your fingers instead. We call this "counting up." Sometimes when you subtract numbers, you know the answer right away in your brain, and that's great! But sometimes, we don't the answer right away. Counting up is a neat trick to help you figure out the answer quickly.

You already know how to count up addition problems. So, let's learn how to count up subtraction problems.

Look at this poster.

Display Counting Up Subtraction poster.

This poster shows the three steps to counting up for subtraction. Let's use these steps to solve this problem: 9 minus 4 is the same as blank. (Point to D.)

The first step says, "Put the minus number in your fist and say it." (Point to Step 1.) **Which number is the minus number? It's the number *right after* the minus sign.**

4.

Yes! Start with the minus number, 4. Put that number in your fist and say, "4."

Tap closed fist on leg and say, "4."

Look at Step 2. (Point to Step 2.) **Step 2 says, "Count up your fingers to the number you start with." So, count up to the number you start with, 9. Watch me. I put the minus number in my fist, 4** (tap closed fist on leg): **5** (hold up 1 finger)**, 6** (hold up 2 fingers)**, 7** (hold up 3 fingers)**, 8** (hold up 4 fingers)**, 9** (hold up 5 fingers).

Now look at Step 3. (Point to Step 3.) **Step 3 says, "Your answer is the number of fingers you have up." How many fingers am I holding up?**

5.

So, what's the answer to 9 minus 4?

5.

That's right! 9 minus 4 is the same as 5.

Write 5.

That's the same answer we got from using the number line, but it's much easier just using our fingers. Sometimes we don't have a number line, but we always have our fingers.

Look at this next problem. (Point to E.) **When you count up with your fingers, don't put a finger up for the minus number. That number goes in your fist.**

Watch me. 8 minus 2 is the same as blank. I put the minus number, 2, in my fist. (Tap closed fist on leg and say, "2.") **Then I count up to the number I start with, 8. Watch.** (Tap closed fist on leg and say,) **2: 3,** (hold up 1 finger)**, 4** (hold up 2 fingers)**, 5** (hold up 3 fingers)**, 6** (hold up 4 fingers) **7** (hold up 5 fingers)**, 8** (hold up 6 fingers). **How many fingers do I have up?**

6.

So, 8 minus 2 is the same as 6. The difference between 8 and 2 is same as 6.

Write 6.

6 is *less* than 8. Your answer is always less than the number you start with.

Before we solve the next problem, let's talk about something very important. Do you have your listening ears on?

Yes.

Subtraction problems are not like addition problems when it comes to the order of the numbers. In a subtraction problem, like 8 minus 2 (point), **you canNOT reverse the order of the numbers. You can't subtract 2 minus 8. That doesn't make sense. In a subtraction problem, you NEVER switch the order of the numbers.**

You always put the minus number in your fist, count up to the number you start with. Your answer is the number of fingers you have up.

Let's practice counting up together. Look at this problem. (Point to F.) **This problem says 15 minus 8 is the same as blank. First, do you add or subtract?**

Subtract.

Do you count up or compute? There's a one-digit and a two-digit number. So, think about what to do. What rule helps you decide to count up or compute?

Look at the two-digit number. If 1 is in the tens place, count up! Otherwise, compute.

That's right. Look at the two-digit number. If 1 is in the tens place, count up. Otherwise, compute.

Is 1 in the tens place?

Yes.

So, what do you do?

Count up!

What number do you put in your fist?

8.

Yes. 8 is the minus number because it comes right after the minus sign. Put the 8 in your fist.

(Students tap closed fist on leg and say,) 8.

What number do you count up to?

15.

So, count up to 15.

9, 10, 11, 12, 13, 14, 15.

How many fingers are you holding up?

7.

So, what's 15 minus 8?

7.

Yes, 7 is the number of fingers you have up. So, 7 is the answer. 15 minus 8 is the same as 7.

Write 7.

Now, over the past few weeks we learned to count up addition problems when both the numbers were one-digit numbers. In subtraction problems, it's a little different.

Sometimes a subtraction problem might have a two-digit number minus a one-digit number. You count up if the two-digit number is less than 19. If the two-digit number is 19 or more, you compute. We'll learn how to compute subtraction problems in a few weeks.

So, in a subtraction problem, if you have a two-digit number minus a one-digit number, you have to think about whether you count up or compute. If the two-digit number is less than 19, you count up. What do you do when the two-digit number is less than 19?

Count up.

That's right. You count up when the two-digit number is less than 19.

Let's try this problem. (Point to G.) **12 minus 7 is the same as blank. First, do you add or subtract?**

Subtract.

That's right. There's minus sign, so you'll subtract.

Do you count up or compute?

Count up.

How did you know to count up?

The two-digit number is less than 19.

That's right. When the two-digit number is less than 19 in a subtraction problem, you count up.

What's the minus number?

7.

7 is the minus number because it's after the minus sign. Put the minus number in your fist, and count up to the number you start with, 12.

8, 9, 10, 11, 12.

How many fingers are you holding up?

5.

So, what's 12 minus 7?

5.

Yes. 12 minus 7 is the same as 5.

Write 5.

Let's try this problem. (Point to H.) **5 plus 8. Do you add or subtract?**

Add.

Smart thinking! There's a plus sign. So, you add! How do you count up an addition problem?

Put the bigger number in your fist, count up the smaller number on your fingers, and your answer is the last number you say.

Counting up addition problems is different from counting up subtraction problems. (Point to posters.) **To count up an addition problem, put the bigger number in your fist, count up the smaller number on your fingers, and your answer is the last number you say.**

To count up a subtraction problem, you put the minus number in your fist, count up to the number you start with, and your answer is the number of fingers you have up.

So, 5 plus 8. Who can show us counting up for 5 plus 8?

(Students count up.)

Yes. You put the bigger number, 8, in your fist and count up 5 more: 9, 10, 11, 12, 13. What's the last number you said?

13.

So, 5 plus 8 is 13.

Write 13.

Look at this problem. (Point to I.) **10 minus 3. Do you add or subtract?**

Subtract.

There's a minus sign (point)**, so you subtract.**

Do you count up or compute?

Count up.

Very good! The two-digit number, or the number you start with, is less than 19, so you count up. To count up a subtraction problem, put the minus number in your fist, count up to the number you start with, and your answer is the number of fingers you have up.

Remind me, what's a minus number?

It's the number after the minus sign.

That's right. The minus number is the number right *after* the minus sign. What's the number you start with?

The first number in the problem.

The number you start with is the first number you see in the problem. It's either the first number on the left side (point to 9 in C) **or the number on top** (point to 9 in D).

So, let's count up 10 minus 3. What's the minus number, 10 or 3?

3.

So, put the 3 in your fist and count up to the number you start with, 10.

4, 5, 6, 7, 8, 9, 10.

How many fingers are you holding up?

7.

Write 7.

Try this last problem with your partner. (Point to J.) **This problem says 9 minus 6 is the same as blank. Do you add or subtract?**

Subtract.

What tells you to subtract?

The minus sign.

The minus sign tells you to subtract. So, use counting up subtraction with your partner.

(Students count up.)

Who can show us counting up 9 minus 6?

(Student demonstrates.)

Great. (Count up 9 minus 6.) **9 minus 6 is the same as 3.**

Write 3.

Before you work with your partner, let's review the Coach's Question Sheet.

Display T CQS 13-16.

The questions in the box are the same. First the Coach says, "Look at the sign." The Coach points to the sign. Then the Coach says, "Add or subtract?" What sign tells you to add?

Plus sign.

What sign tells you to subtract?

Minus sign.

Great. Then the Coach says, "Count up or compute?"

After the Player answers the questions in the box, the Coach asks, "What minus what?" The Player responds by saying the problem, such as 9 minus 4.

Then the Coach asks, "What's your answer?" The Player says the answer to the math problem. Finally, the Coach says, "Write it." The Player writes the answer.

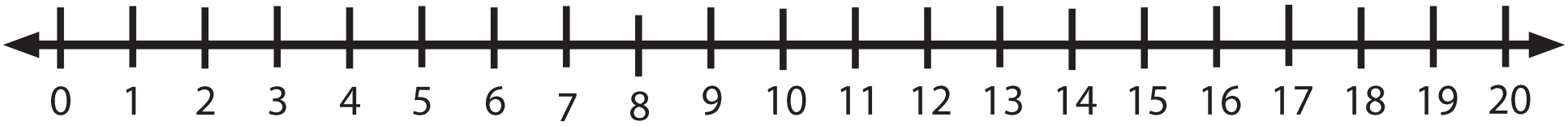
PARTNER WORK

See Activity Guide: PALS.

See Activity Guide: Partner Pencils.

Posters

NUMBER LINE



PARTNER RULES

1. Talk only to your partner, and talk only about math.

2. Be on task.

3. Be nice and helpful.

4. Use a soft voice.

COUNTING UP

Addition

1. Put the bigger number in your fist and say it.

2. Count up the smaller number on your fingers.

3. Your answer is the last number you say.

If 1 is in the tens place, count up!
Otherwise, compute!

15 + 3	→	Count up	98 - 6	→	Compute
72 + 8	→	Compute	12 - 4	→	Count up
37 + 2	→	Compute	43 - 9	→	Compute
13 + 6	→	Count up	14 - 8	→	Count up

COUNTING UP

Subtraction

1. Put the minus number in your fist and say it.

2. Count up your fingers to the number you start with.

3. Your answer is the number of fingers you have up.

Math Wise

Calculation and Computation Program at Second Grade

Lynn S. Fuchs, Sarah R. Powell, & Doug Fuchs

Supplemental Materials for Whole-Class Instruction

Transparencies
Lesson Materials
Time Owls

DO NOT REPRODUCE WITHOUT THE WRITTEN CONSENT OF THE AUTHORS

Transparencies

PALS Partners

First Coach	Second Coach

A. +

B. 2 + 3

C. -

D. 5 - 4

E. =

F. 3 = 3

5 & 5; 6 & 4; 2 & 2; 3 & 5

G. 2 + 3 = 5

H. 4 + 2 = ___

I. 5 - 1 = 4

J. 6 - 2 = ___

K.
$$\begin{array}{r} 8 \\ -\ 4 \\ \hline \end{array}$$

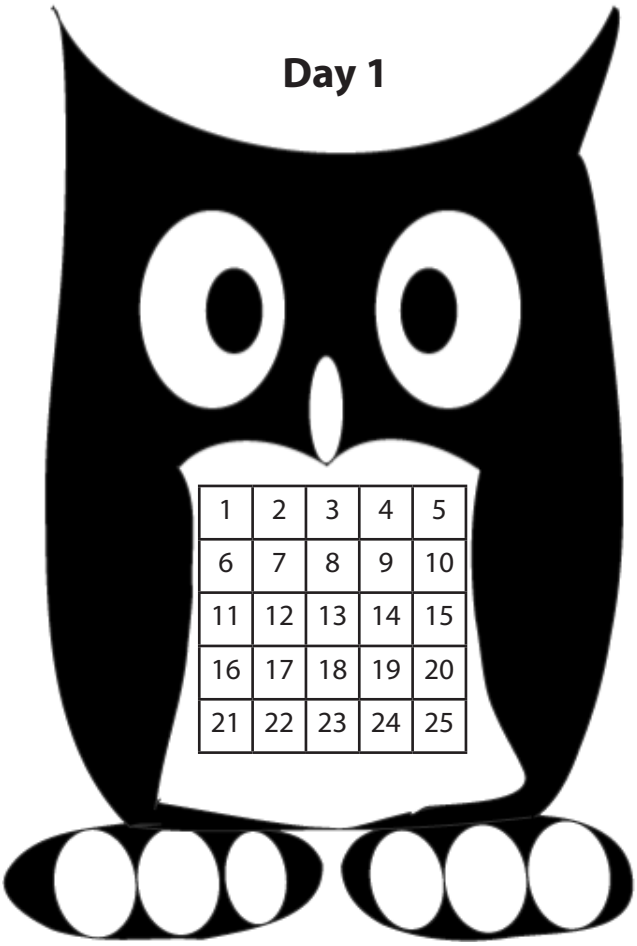
L.
$$\begin{array}{r} 2 \\ +\ 5 \\ \hline \end{array}$$

=

Math Wise Points

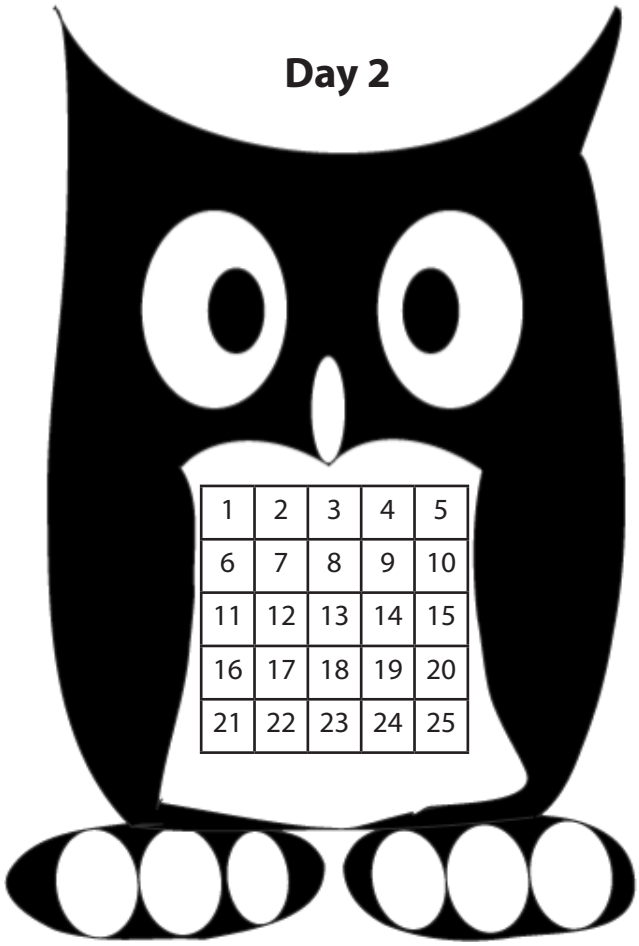
DAYS 1-4

Day 1



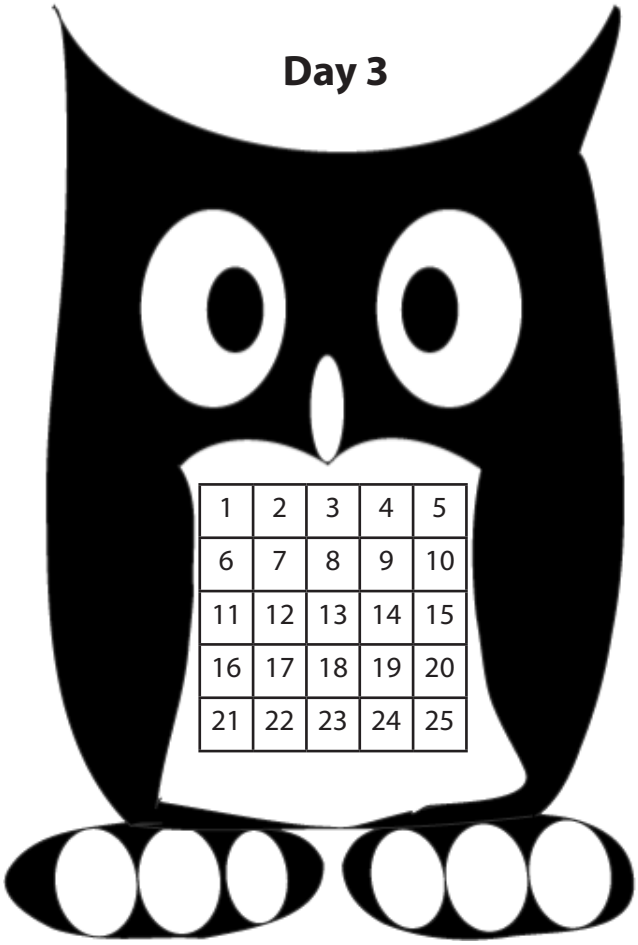
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Day 2



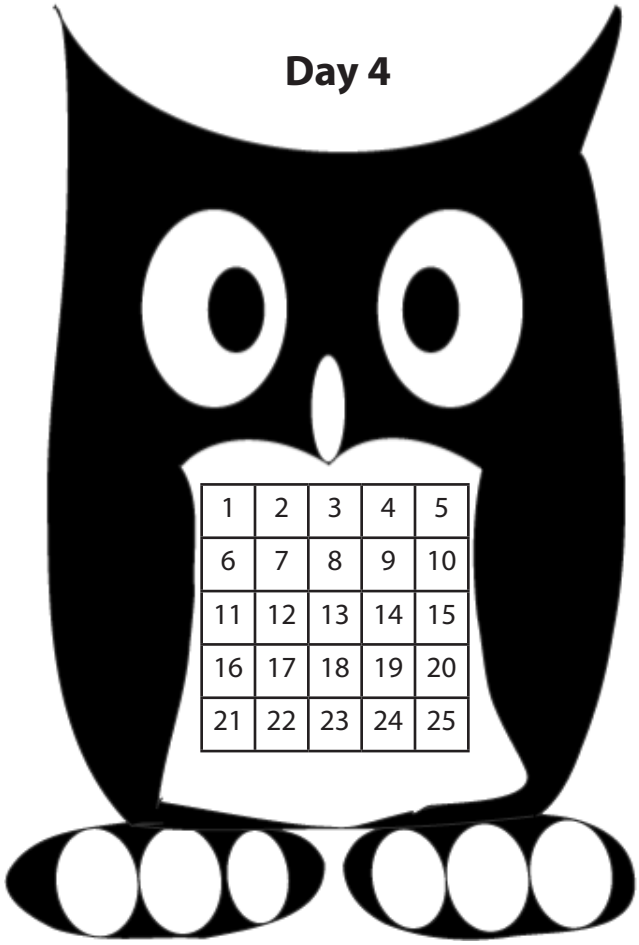
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Day 3



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

Day 4



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

Practice Sheet

DAY 1

Name _____ Date _____

Scored by _____

A 8 + 7	B 5 + 2 = ___	C 1 + 5	D 7 + 4	E 9 + 6
F 5 + 7	G 5 + 3	H 7 + 2	I 1 + 6 = ___	J 4 + 2
K 4 + 4 = ___	L 9 + 4	M 1 + 3	N 8 + 5	O 9 + 2
P 6 + 7	Q 7 + 8	R 8 + 6 = ___	S 3 + 9	T 2 + 8
U 3 + 5	V 1 + 6	W 5 + 2	X 8 + 4	Y 5 + 5 = ___

A. +

B. =

C. 5 + 3 = ___

D. 4 + 2 = ___

E. 7 + 3 = ___

F. 3 + 4 = ___

G. 6 + 4 = ___

H. 5 + 8 = ___

I. 7 + 6 = ___

J. 8 + 9 = ___

Coaching Sheet

DAY 2

Player's Name _____ Date _____

Coach's Name _____

$5 + 8 = \_\_\_$

$$\begin{array}{r} 6 \\ +\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +\ 6 \\ \hline \end{array}$$

$6 + 3 = \_\_\_$

$$\begin{array}{r} 9 \\ +\ 4 \\ \hline \end{array}$$

Practice Answer Sheet

DAYS 1-4

Day 1

A 15	B 7	C 6	D 11	E 15
F 12	G 8	H 9	I 7	J 6
K 8	L 13	M 4	N 13	O 11
P 13	Q 15	R 14	S 12	T 10
U 8	V 7	W 7	X 12	Y 10

Day 2

A 3	B 7	C 10	D 11	E 16
F 15	G 11	H 10	I 13	J 10
K 7	L 3	M 8	N 8	O 15
P 13	Q 14	R 9	S 12	T 12
U 5	V 7	W 8	X 2	Y 12

Day 3

A 7	B 14	C 6	D 12	E 13
F 10	G 5	H 11	I 15	J 14
K 4	L 8	M 16	N 12	O 8
P 12	Q 9	R 17	S 8	T 4
U 14	V 10	W 16	X 7	Y 10

Day 4

A 6	B 9	C 14	D 5	E 8
F 17	G 10	H 8	I 13	J 11
K 10	L 11	M 15	N 15	O 5
P 2	Q 5	R 15	S 9	T 13
U 5	V 6	W 7	X 17	Y 13

Coach's Question Sheet

DAYS 1-4

Look at the sign.

Add or subtract?

Count up or compute?

1. What plus what?
2. What's your answer?
3. Write it.

A. -

B. =

C. Number you start with / Minus number

$9 - 4 = \_\_$

D.
$$\begin{array}{r} 9 \\ -\ 4 \\ \hline \end{array}$$
Number you start with

Minus number

E. $8 - 2 = \_\_$

F. $15 - 8 = \_\_$

G. $12 - 7 = \_\_$

H.
$$\begin{array}{r} 5 \\ +\ 8 \\ \hline \end{array}$$

I. $10 - 3 = \_\_$

J.
$$\begin{array}{r} 9 \\ -\ 6 \\ \hline \end{array}$$

Coach's Question Sheet

DAYS 13-16

Look at the sign.

Add or subtract?

Count up or compute?

1. What minus what?
2. What's your answer?
3. Write it.

Practice Answer Sheet

DAYS 13-16

Day 13

A 5	B 9	C 8	D 13	E 2
F 8	G 8	H 14	I 8	J 4
K 3	L 6	M 7	N 4	O 13
P 13	Q 8	R 7	S 6	T 7
U 2	V 5	W 2	X 3	Y 14

Day 14

A 9	B 7	C 12	D 3	E 1
F 4	G 15	H 9	I 5	J 7
K 4	L 9	M 9	N 8	O 15
P 3	Q 7	R 7	S 10	T 4
U 7	V 6	W 4	X 6	Y 12

Day 15

A 8	B 1	C 11	D 6	E 7
F 5	G 16	H 9	I 9	J 6
K 4	L 4	M 9	N 9	O 11
P 4	Q 8	R 8	S 11	T 7
U 7	V 8	W 6	X 6	Y 15

Day 16

A 8	B 3	C 14	D 4	E 8
F 16	G 8	H 4	I 7	J 2
K 2	L 7	M 9	N 16	O 8
P 2	Q 7	R 8	S 10	T 9
U 6	V 6	W 4	X 4	Y 13

Lesson Materials

Practice Sheet

DAY 1

Name _____ Date _____

Scored by _____

A 8 + 7	B 5 + 2 = ___	C 1 + 5	D 7 + 4	E 9 + 6
F 5 + 7	G 5 + 3	H 7 + 2	I 1 + 6 = ___	J 4 + 2
K 4 + 4 = ___	L 9 + 4	M 1 + 3	N 8 + 5	O 9 + 2
P 6 + 7	Q 7 + 8	R 8 + 6 = ___	S 3 + 9	T 2 + 8
U 3 + 5	V 1 + 6	W 5 + 2	X 8 + 4	Y 5 + 5 = ___

Practice Sheet

DAY 2

Name _____ Date _____

Scored by _____

A 1 + 2	B 4 + 3	C 5 + 5	D 7 + 4 = ___	E 7 + 9
F 8 + 7	G 8 + 3 = ___	H 4 + 6	I 4 + 9	J 8 + 2
K 1 + 6	L 2 + 1	M 3 + 5	N 7 + 1	O 7 + 8 = ___
P 9 + 4	Q 5 + 9	R 5 + 4 = ___	S 6 + 6	T 8 + 4
U 1 + 4 = ___	V 3 + 4	W 6 + 2	X 1 + 1	Y 7 + 5

Coach's Question Sheet

DAYS 1-4

Look at the sign.

Add or subtract?

Count up or compute?

1. What plus what?
2. What's your answer?
3. Write it.

Coach's Question Sheet

DAYS 13-16

Look at the sign.

Add or subtract?

Count up or compute?

1. What minus what?
2. What's your answer?
3. Write it.

Coaching Answer Sheet

DAY 13

Player's Name _____ Date _____

Coach's Name _____

$$\begin{array}{r} 12 \\ -\ 6 \\ \hline \mathbf{6} \end{array}$$

8 - 2 = **6**

$$\begin{array}{r} 14 \\ -\ 5 \\ \hline \mathbf{9} \end{array}$$

16 - 7 = **9**

$$\begin{array}{r} 5 \\ -\ 2 \\ \hline \mathbf{3} \end{array}$$

$$\begin{array}{r} 12 \\ -\ 8 \\ \hline \mathbf{4} \end{array}$$

$$\begin{array}{r} 9 \\ -\ 7 \\ \hline \mathbf{2} \end{array}$$

$$\begin{array}{r} 12 \\ -\ 9 \\ \hline \mathbf{3} \end{array}$$

13 - 8 = **5**

$$\begin{array}{r} 11 \\ -\ 8 \\ \hline \mathbf{3} \end{array}$$

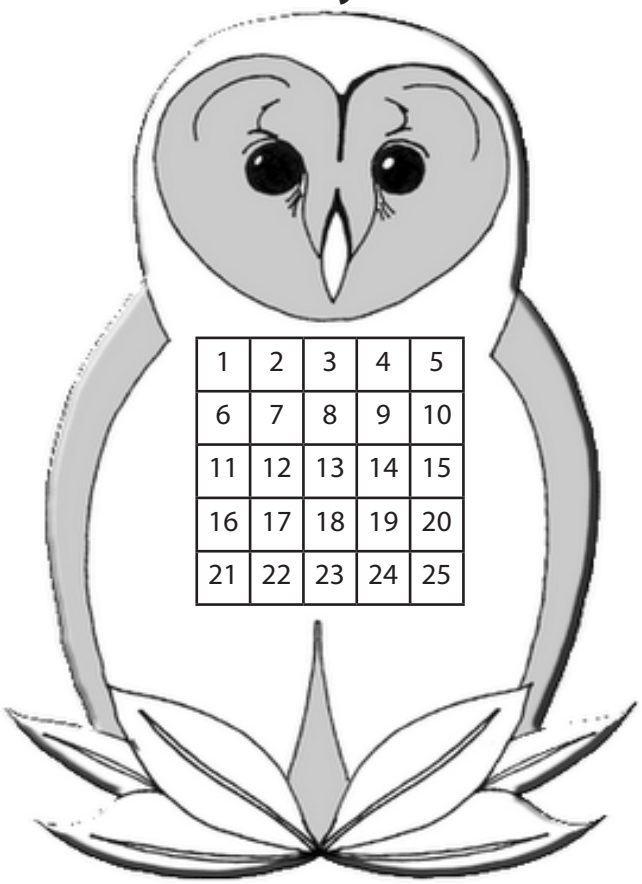
10 - 2 = **8**

$$\begin{array}{r} 7 \\ -\ 6 \\ \hline \mathbf{1} \end{array}$$

Math Wise Point Sheet

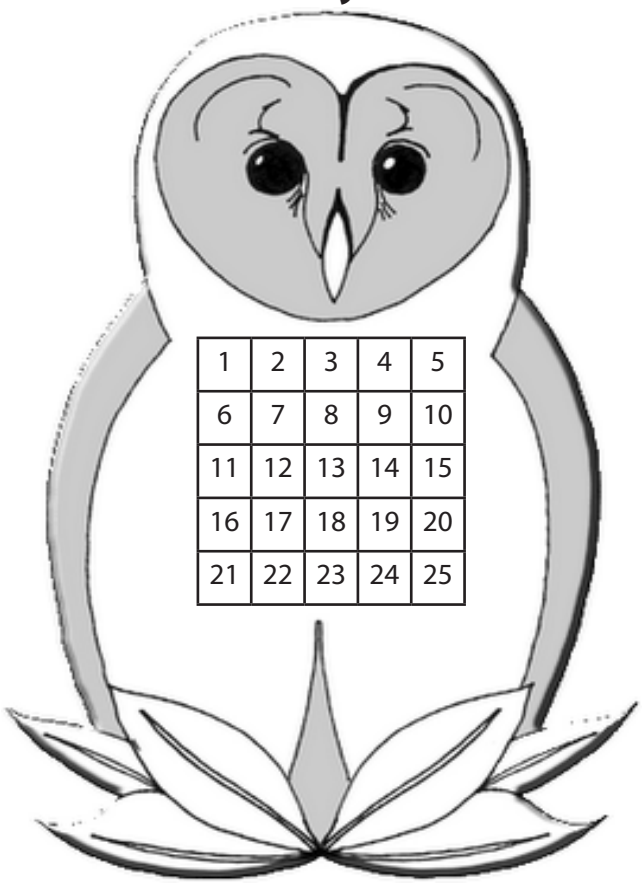
DAYS 13-16

Day 13



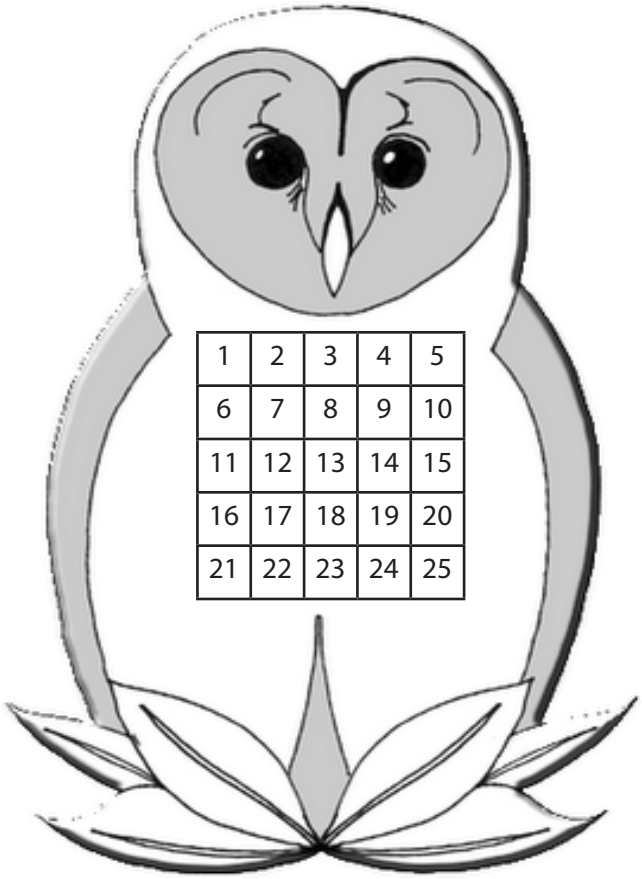
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Day 14



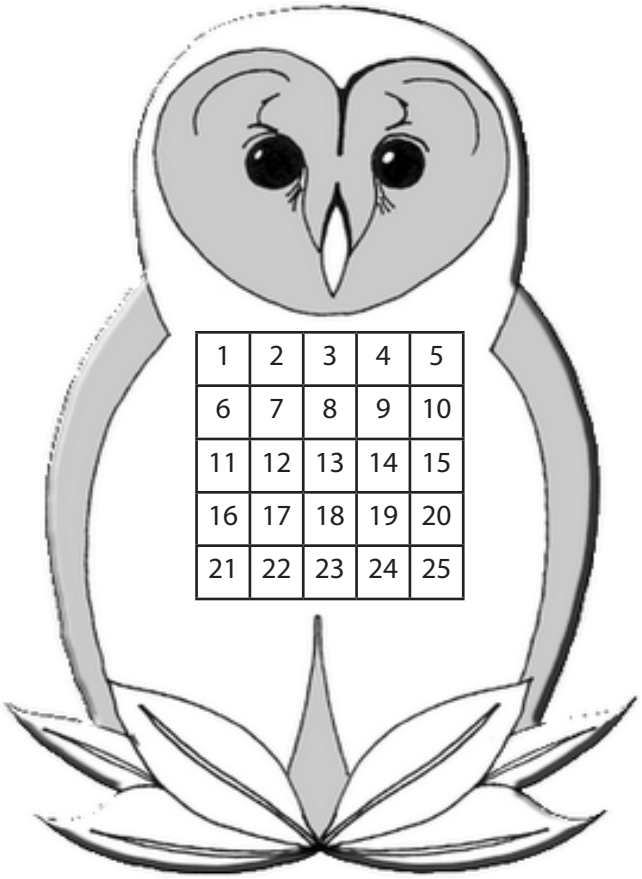
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Day 15



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

Day 16



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

Practice Sheet

DAY 13

Name _____ Date _____

Scored by _____

A 12 - 7	B 1 + 8 = ___	C 16 - 8	D 9 + 4	E 5 - 3
F 17 - 9	G 14 - 6	H 7 + 7	I 4 + 4	J 9 - 5 = ___
K 4 - 1 = ___	L 14 - 8	M 3 + 4	N 12 - 8	O 8 + 5
P 6 + 7	Q 11 - 3	R 11 - 4 = ___	S 9 - 3	T 2 + 5
U 3 - 1	V 13 - 8	W 8 - 6	X 6 - 3 = ___	Y 8 + 6

Coaching Sheet

DAY 13

Player's Name _____ Date _____

Coach's Name _____

$$\begin{array}{r} 12 \\ -\ 6 \\ \hline \end{array}$$

8 - 2 =

$$\begin{array}{r} 14 \\ -\ 5 \\ \hline \end{array}$$

16 - 7 =

$$\begin{array}{r} 5 \\ -\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ -\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ -\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ -\ 9 \\ \hline \end{array}$$

13 - 8 =

$$\begin{array}{r} 11 \\ -\ 8 \\ \hline \end{array}$$

10 - 2 =

$$\begin{array}{r} 7 \\ -\ 6 \\ \hline \end{array}$$