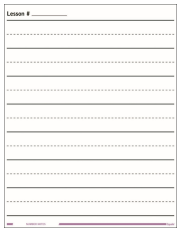
Recommended Materials for Training

It is recommended to have the materials listed below present while viewing the Lesson Component training. Print one copy of the handouts for each participant.

Equals Curriculum Materials
 Solve Poster
 Number Notes Poster
 LITTLE Step-by-Step

Materials List by Section:
TRAINING EXAMPLE

Section 2C

Print (MO)

Skill Worksheets
Problem Solving Worksheets

Number Notes 1/student per lesson
I Learned Workmats

Lesson pic-symbols
Student Tools:
none
Workmat copies
none
Optional: Workmat (student-sized)

Game Boards

Classroom Materials
(provided by teacher)
food pictures (for pictograph)
marker
plastic zipper bags (22)
rocks (5)

Equals Manipulative Kit

ATI spinner	Cookie Shapes
attribute blocks	counters: baseballs, butterflies, flying disks, insects, ocean animals, turtles
balance scale	foam tiles
building blocks	MathLine
connecting cubes	stacked number line

Equals Print Kit

Cards:
Action
Content cards:
Animal
Color
Food
Numeral
Shape
Size
Poster cards:
Backyard

Workmats:
2
3
4
13
36

Vocabulary cards:

category	less
color	more
compare	pictograph
equal	separate
graph	shape
join	size

Posters:
Number Notes
Solve
Backyard

Student Tools:
none

Lesson Prep steps:

1. **All items in gray are to be filed in file folders.**
2. **Print** items in left gray boxes from Members Only--file each material in corresponding file folders (Worksheets, Number Notes, I Learned Workmats, Lesson pic-symbols, Student Tools, Workmats, Game Boards)
3. **Locate** items in right gray boxes from Equals Kit--file each material in corresponding file folders (Vocabulary and Student Tools)
4. **Locate prior to lesson**: Classroom materials
5. **Locate during lesson when needed:** listed Manipulatives, Cards, Workmats, Posters

Lesson 3-A-1

OBJECTIVE: Student will compose and decompose sets of 2-5 and describe the parts and whole.

Materials

Warm up

- Vocabulary card: join, separate
- Lesson pic-symbols
- Poster: Working at a Pet Store
- Cards: Action, Subitizing
- *plastic zipper bags (3)*
- *sticky notes*
- ATI spinner
- building blocks
- connecting cubes
- colored bowls

Explore

- Workmat: 13
- Posters: Working at a Pet Store, Number Notes
- Cards: Action, Working at a Pet Store
- Lesson pic-symbols
- counters: turtles, baseballs
- *object, pictures related to theme*

Warm Up

A. Vocabulary Review: join, separate

Show word(s). Read together. Say, "*Join* means to put together. *Separate* means to take apart." Make Concrete Connections with students: place five red cubes in a bag. Place three yellow cubes in a bag and two blue in a bag. While making, review joining and separating the cubes in the bags. Ask, "What can you tell me about what we did with the sets of cubes?" Students answer. Label bag of red cubes *join,* and bags of yellow and blue cubes *separate.* Find example(s) in classroom or poster. Show meaning with materials. Ask, "How can you show me what *join* and *separate* means?" Students take turns showing the meaning.

B. Game: Join and Separate

Prep: Place blocks on table. Fasten Vocabulary cards (*join, separate*) on All-Turn-It spinner.

Directions: Player spins. If he/she spins *join,* player takes three blocks, joins them to existing sets and says if has *more* or *less*. If spins *separate,* player separates own set of blocks, gives some to player on the left, and says if has more or less. After five turns, compare rows of blocks to see which player(s) have more, less, or equal amounts of blocks.

C. Math Dash: Connect Action cards to actions as they occur (identify, join, separate).

Show rod with five connecting cubes. Say, "I see a set of five cubes." Break off three and place under bowl. Put remaining two on top. Ask, "How many are hidden under the bowl?" Reveal amount. Re-connect rod and count. Say, "The total is five." Show Subitizing card with five. Cover three dots with sticky note. Ask, "I only see two dots. How many dots are under the sticky note?" Students answer and explore. Lift sticky note to show the *part* covered (three dots) and five total. Repeat with 2-4. Students explore. Ask open-ended question(s), e.g. *After I joined parts, was the total the same as before?* Students answer.

Explore & Connect

A. Poster/Cards: Working at a Pet Store - Connect Action cards to actions as they occur (identify, join, separate).

Show poster/cards. Discuss what you see on the poster/cards and personal experiences; look at object or picture from school, Internet, book, etc. Locate sets that can be joined and separated on poster/cards. Show how sets were joined or separated.

B. Math Tools: Connect Action cards to actions as they occur (identify, join, separate).

Say, "Let's explore joining and separating sets into parts and *whole* amount." Model making sets with turtles. Count two turtles. Say,"Two turtles is the *whole* set." *Separate* turtles. Ask, "What happens when I *separate* the turtles into parts?" Move turtles into parts on Workmat 13. Students answer and explore. Say, "I separate the *whole* set of turtles into a *part* of one turtle and a *part* of one turtle." Repeat with multiple ways to *separate* three, four, and five, e.g. *separate* three into sets of two & one, then one & two, etc.

C. Show & Tell: Number Notes poster - Connect Action cards to actions as they occur (identify, join, separate).

Display poster. Talk about what you know about finding parts and the *whole* amount, thinking aloud. Say, "I know I can find the parts and *whole* set of baseballs on Workmat 13. I can *join* and *separate* on this workmat this way." Show how to *join* and *separate* a set of four baseballs into parts and the *whole* amount. Write what you know on poster with words, pic-symbols, and/or drawings to model. Use new vocabulary (*part* and *whole*).

Ask, "What do you know about parts and *whole* amount?" Students tell and show what they see and know about parts and *whole* amount. Write all responses on poster with words, sentences, pic-symbols, pictures, and/or objects (fasten to poster with tape).

Ask, "What do I want to know about parts and *whole* amount? I want to know about joining and separating sets into parts and the *whole* amount." Write on poster. Ask, "What do you want to know about parts and *whole* amount?" Students answer. Write responses.

Lesson 3-A-1

OBJECTIVE: Student will compose and decompose sets of 2-5 and describe the parts and whole.

Vocabulary
- Vocabulary card: part, whole
- Lesson pic-symbols
- building blocks
- *plastic zipper bags (2)*

Think About It, Solve It Together
- Poster: Solve
- Lesson pic-symbols
- Cards: Action
- Workmat: 13
- connecting cubes
- counters: turtles, baseballs

Introduce and Connect

A. Vocabulary: part, whole

Show word(s). Read together. Make Concrete Connections with students: place two cubes in each of the two bags. Fasten side by side in bag. Label each bag *part*. Label across both bags *whole set*. Pass around. Write/read definition: *Whole means containing all parts. Part means piece of a whole amount.*

Solve Poster Questions

1. Facts: What do I know about the problem?
2. Action: What can I do to solve it?
3. Estimation: What might the solution look like?
4. Tools/Strategy: What tool or strategy can I use?
5. Solution: How did I solve it?

B. Think About It: Action cards: (identify, join, separate)

Place baseballs, Workmat 13, and connecting cubes on table. Demonstrate solving problem, thinking aloud. As each question is asked/answered on poster, write under heading as indicated. Think aloud *what you* ***know*** and ***want to know*** about details of the problem while you solve it. Emphasize facts and the question / direction.

Write and read problem: *Joe works in the Dog Training section of the Pet Store. He has a set of three baseballs to put into two bags. Identify different ways Joe could separate the set of baseballs into two bags.*

1. ***Facts*:** Say, "I know Joe has a set of dog toys. The problem shows he has a whole set of three baseballs and two bags. I know Joe can *separate* the set in different ways into the two bags."
2. ***Action*:** Show Action card choices, modeling each. Say, "I will count the *whole* set, then *separate* the set into parts. I want to know how to *separate* the set into two parts in different ways." Place matching Action card (separate) near student(s) for support.
3. ***Estimate/Predict*:** Show workmat and toys. Say, "I estimate two baseballs in one bag and one baseball in another bag."
4. **Tools/Strategy:** Show chosen Action card(s). Choose and show one strategy: *separate* set on Workmat 13, then *join* and *separate* another way. Say, "I used the workmat to *separate* the *whole* set into parts of two baseballs and one baseball." Solve; identify two different solutions, e.g. parts of two & one and parts of one & two. Check with estimate.
5. Ask, "***How did I get the solution?***" Demonstrate and explain that you separated the *whole* set into parts. Check by showing three connecting cubes. Break into parts of two and one. Match to baseballs on Workmat 13. *Join* and repeat to *separate* with different parts. Write solution on poster.
6. Review Solve poster. Repeat 4 & 5 with other strategy: *separate* connecting cube rod, then *join* and *separate* another way. Check solution.

C. Solve It Together: Action cards: (identify, join, separate)

Place turtles, connecting cubes, and Workmat 13 on table. Solve problem together. As each question is asked/answered on Solve poster, write under heading as indicated. *Note concrete, semi-concrete, and/or abstract student example(s) for next page.*

Write problem and read: *Grace takes care of the animals at the pet store. She has to clean the large turtle tank. Grace has two smaller tanks she can use for the four turtles while she cleans the large tanks. Identify different ways Grace could separate the set of turtles into two tanks.*

1. ***Facts*: "**What are the facts in the problem?" Find facts about the problem. Students mark or name facts.
2. ***Action*:** Show action choices with Action cards, modeling each. Students choose as a group. Place matching Action card(s).
3. ***Estimate/Predict*:** Say, "Let's think. Estimate what the solution might be." Show students how to think about an estimate by thinking about the facts, e.g. *There are four turtles and two tanks.* Students estimate.
4. ***Tools/Strategy*:** Show chosen Action card(s). Show strategy choices: *separate* set on Workmat 13, then *join* and *separate* another way **or** *separate* connecting cube rod, then *join* and *separate* another way. Choose strategy together. Solve problem together. Ask questions to guide students. Students answer to solve. Check with estimate.
5. Ask,"***How did we get the solution?***" Show how the *whole* set was separated. Ask students, "What happened next?" Students answer, e.g. *We joined the parts and separated the turtles another way*. Write solution on poster.
6. Review Solve poster. Repeat 4 & 5 with other strategy. Check solution.

Lesson 3-A-1

OBJECTIVE: Student will compose and decompose sets of 2-5 and describe the parts and whole.

Materials

Teach (CSA), Problem Solving, Close

- Workmats: 13, I Learned (MO)
- Cards: Action, Number Set, Numeral
- Poster: Solve, Working at a Pet Store
- Lesson pic-symbols
- Worksheets: Skill, Problem Solving
- Number Notes (MO: 1/student)
- counters: turtles
- connecting cubes
- building blocks
- Math Dash materials
- *sticky note*

Teach

A. Concrete, Semi-Concrete, Abstract Instructional Sequence

Show three views (concrete, semi-concrete, and abstract) to all students. Use the student examples noted from Solve It Together first. Use examples provided below, as needed, to represent all three. When finished, students choose one or more to try.

C Place two turtles on *whole amount* on Workmat 13. Say, "Two is the *whole* set." *Separate* turtles into parts. Say,"One and one are parts." Rejoin and say, "Two is the *whole* amount." Repeat: three, four, and five by separating each possible way, rejoining each time.

S Show Number Set card 2. Say, "Two is the *whole* amount." Cover one arm with sticky note. Fold back sticky note to show *parts*. Say, "One and one are parts." Remove sticky note to rejoin. Say, "Two is the whole amount." Repeat with three, four, and five by separating every possible way, rejoining each time.

A Place Numeral card 2 on *whole* amount. Say, "Two is the *whole* amount." Remove 2 and place 1 and 1 Numeral cards on *parts*. Say, "One and one are parts." Rejoin and place 2 on *whole* amount. Say, "Two is the *whole* amount." Repeat with three, four, and five by separating every possible way, rejoining each time.

B. Skill Worksheet: Students practice to reinforce what has been learned to this point in the lesson.

Problem Solving

A. Solve it: Action cards: (identify, join, separate)

Fasten carrot pic-symbols on rectangular prisms. Place rabbit pic-symbols in each part of Workmat 13. Show connecting cubes. Support students with Solve poster steps. Read problem: *Maggie's job at the pet store is to feed the animals. She has five carrots and two rabbits. Identify different ways Maggie could separate the set of carrots for two rabbits.*

L1 Show facts in problem using manipulatives. Show Action cards. Student chooses action(s). Choose strategy for student and review (*separate* set on Workmat 13, then *join* and *separate* another way **or** *separate* connecting cube rod, then *join* and *separate* another way). Student describes *parts* and *whole* amount. Show and read question on Problem Solving worksheet. Student records.

L2 Student marks facts in problem. Show Action cards choices and review tools/strategies for student to choose (*separate* set on Workmat 13, then *join* and *separate* another way **or** *separate* connecting cube rod, then *join* and *separate* another way). Student chooses. Student describes parts and *whole* amount. Student records solution on Problem Solving worksheet and checks it.

L3 Provide coaching as needed. Student marks facts in problem. Student chooses an action, using Action cards as needed. Student chooses a tool/strategy and solves problem. Student records solution on Problem Solving worksheet and checks it.

B. Discuss

Ask, "How did you get your solution?" Students take turns showing what they did. Students show how to check it.

C. Group Problem Challenge

Read same problem. Ask, "What would happen if we changed rabbits to cats?" "What if we changed the *whole* amount of rabbits to three?" Solve new problems together; discuss the differences in the problems and if the strategies changed.

Close

A. Math Dash Revisited

Repeat Math Dash from first page of lesson.

B. What Did We Learn? I Learned Workmats, Number Notes

Students show and tell what they have learned, following the structure of I Learned Workmats (leveled) using lesson materials. Students record what they learned on Number Notes Math Journal pages using words, pic-symbols, or objects.

Follow Up

Lesson 3-A-1

OBJECTIVE: Student will compose and decompose sets of 2-5 and describe the parts and whole.

Sensing Math

- *Join* and *separate* lumps of play dough.
- *Join* and *separate* plastic building bricks.
- Laminate and cut a picture into parts. Students *join* the parts to make the *whole* amount. Option: provide puzzles.

Real Life Problem Solving

Classroom Connection: Give students two, three, or four snacks and two plates. They *separate* the snacks into two parts and identify the parts, then *join* and *separate* the set in a different way and identify the parts. When the sets are joined, students identify the *whole* amount.

Content Connection: Count five school days in the past week on Friday together. Students color each cloudy day gray and sunny day yellow. Discuss the *whole* 5-day school week and the number of parts made of cloudy and sunny days.

Common Connection: Students talk about parts of sets and *whole* sets they see in the hallway or community, e.g. lockers, art, school work displays, parts of a house, craft kit with multiple parts, car model, etc.

Partner Problem Solving

Materials/Prep: Solve poster; Lesson Problem Template/pic-symbols; tools/strategy supports from lesson, Action Cards, materials used in lesson; additional materials for new problem(s); Challenge: alternate tools

Students write problem and solve together with a partner. Students share problem and solution with the group.
Options: 1) Students write and give problem to other partners in class. Students choose tools and strategies to solve the problem. Each student pair explains what they did and/or answers questions. 2) Write and solve new problem together as a group. Discuss.

L1 Students choose objects or pic-symbols to write the problem. To solve: show facts in problem with manipulatives. Show and demonstrate Action cards. Students choose action(s). Choose and review strategy (*separate* set on Workmat 13, then *join* and *separate* another way **or** *separate* connecting cube rod, then *join* and *separate* another way). Once solved, students check it.

L2 Students choose pic-symbols and/or words to write a problem with the template. To solve: provide environmental supports as needed. Students mark facts in problem. Show and demonstrate Action cards and review strategies for students to choose (*separate* set on Workmat 13, then *join* and *separate* another way **or** *separate* connecting cube rod, then *join* and *separate* another way). Once solved, students check it.

L3 Students choose words to write their own problems. To solve: provide coaching as needed. Students mark facts in problem. Students choose an action, using Action cards as needed. Students choose a tool/strategy and solve problem. Once solved, students check it.

Games

A. Concept game: Part, Part, Whole Amount

Materials/Prep

Place blocks and Workmat 13 on table. Place two sets of Numeral cards (2-5) on All-Turn-It spinner. Draw chart on board for points. Split group into two teams.

Directions: Team spins and takes number of blocks. Team separates set into two parts. Team identifies the amounts in the parts and the *whole* amount, then chooses one of the parts to give to the other team. Each team receives one point per block on chart, then places blocks back onto pile. Play continues. After five turns, compare points on chart to determine winner.

B. Skill game: Whole Amount

Materials/Prep

Fasten Numeral cards (0-4) on All-Turn-It spinner. Place connecting cubes and Workmat 13 on table. Split group into two teams.

Directions: Team 1 spins for a part. Team player makes a rod with the amount for a *part*. Team states the amount of the *part* then takes one more, and says, "_____ (amount of first *part*) and one are the parts." Team joins the two parts together, counts the *whole* amount and states it, e.g. *Four is the whole amount.* Play continues with Team 2. Team with more after five turns wins.

Pacing Guide

Example of Equals Daily-Weekly Lesson Pacing

This guide is based off the Equals pacing guide for students at Level 1, 2 and 3. Always use the pacing appropriate to the needs of your students. This resource is meant to be a general support for teachers to use while planning their math lessons. Math Focal Point review should be included as a daily opening activity.

Level 1	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Vocabulary Review	Math Dash	Math Tools	Vocabulary: New	Solve It Together
	Game	Poster / Cards	Show & Tell	Think About It	
Week 2	C-S-A	Solve It	Discuss	Math Dash Revisited	Follow- Up Page
	Skill Worksheet	Problem Solving Worksheet	Group Problem Challenge	What Did We Learn?	Follow-Up Page

Level 2	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Vocabulary Review	Poster / Cards	Vocabulary: New	C-S-A	Solve It
	Game	Math Tools	Think About It	Skill Worksheet	Problem Solving Worksheet
	Math Dash	Show & Tell	Solve It Together		
Week 2	Discuss	What Did We Learn?			
	Group Problem Challenge	Follow- Up			
	Math Dash Revisited	Follow-Up			

Level 3	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Vocabulary Review	Math Tools	C-S-A	Discuss	Follow-Up
	Game	Show & Tell	Skill Worksheet	Group Problem Challenge	Follow-Up
	Math Dash	Vocabulary: New	Solve It	Math Dash Revisited	
	Poster / Cards	Solve It Together	Problem Solving Worksheet	What Did We Learn?	

Implementation Steps

Utilize the following checklist as a guide through the initial implementation steps of Equals Math. There are a variety of pre-recorded webinars to support the listed steps on Members Only. Look for the *Training* tab to identify and view the pre-recorded webinars needed to complete the steps.

If you have additional questions, please email: curriculum@ablenetinc.com for support.

√	Implementation Step	Description of Step
	Create Members Only account.	Reference steps outlined on Quick Start Guide card included in your curricular kit.
	Organize Curricular and Manipulative Kit materials	To organize materials: Locate Organization Instructions in Overview Manual, starting on page 5. View *Overview and Organization* webinar : Members Only > Resources Tab > Overview Manual > Organization
	View Equals Math training	pre-recorded webinars (found on Members Only) live webinar
	Locate Assessment materials *if administering	Assessment materials packaged with Assessment in box. Student Response Booklets and Kit/classroom materials lists: Members Only
	Assess students for placement within the curriculum	To assess students, use the following options: Equals assessment, district or state assessment or by using what you know about each student's math knowledge and the Contents pages in this document starting on page 12.
	Introduce materials to students (Exploration Lessons)	Familiarize students to manipulatives, workmats, and tools, prior to lesson instruction. See Exploration Lessons in Appendix C on page 56 in this document for instructions on how to present materials and establish rules.
	Determine starting point for each student	Each student should be placed in the curriculum based on their math knowledge. Use assessment outcome to determine the appropriate chapter, section, and lesson and create small student groups accordingly for math instruction.
	Organize and prep materials for instruction	Prior to teaching a lesson: organize materials using the *Prepping by Section* method. View pre-recorded training webinar on Members Only.
	Teach a lesson with a Math Focal Point	Begin teaching a lesson with an established Math Focal Point during instruction. View *Lesson Component* pre-recorded webinar on Members Only.