Kindergarten

Application Problems

Eureka Math

M1:L1

Application Problem

Materials: (T) Blue sock

Hold up a blue sock.

T: Please draw a picture of this sock.

M1:L2

Application Problem

Jeremy has 3 marbles. Draw his marbles.

M1:L3

Application Problem

Draw two circles that are the same but a different color.

M1:L4

Application Problem

Color these pictures so that they are exactly the same. Tell a friend how you know that they are exactly the same.

M1:L5

Application Problem

With a partner, talk about how we could sort the class into two groups. For example, students who are wearing pants and students who are wearing shorts.

M1:L6

Application Problem

Draw one thing that you would wear in the summer. Draw one thing that you would wear in the winter.

Tell a friend how you chose those items.

M1:L7

Application Problem

Find two things in this room that we use during math. Show a friend the things you found. How many things did you and your friend find all together? Did you find some of the same things? If so, put them together and count them.

M1:L8

Application Problem

Materials: (S) Counters in a bag

Put 4 counters in a row going across. (Wait for students do so.) Put 4 counters in a column going up and down. (Wait for students do so.) Draw your counters on your paper.

M1:L9

Application Problem

Draw a caterpillar pet that has 4 different parts. Show your pet to a friend.

M1:L10

Application Problem

Draw 5 dogs playing. Draw a fence that keeps exactly 3 of them inside.

M1:L11

Application Problem

Read the problem to the students. Have students use red and blue to draw their crayons.

Oh, no! Someone threw 4 crayons on the floor. Draw the crayons. Compare your crayons to your friend's.
How many of your crayons are the same color as your friend's?

M1:L12

Application Problem

Draw a group of 4 apples. Make some red and some green. Tell your friend how many are red and how many are green.

Did you and your friend have the same number of red apples?

M1:L13

Application Problem

Johnny had 2 cookies in his lunchbox. He gave 1 to a friend and ate 1 himself. How many cookies does he have now?

M1:L14

Application Problem

How many ears do you have? Write the number.
How many heads do you have? Write the number.
How many feet do you have? Write the number.
How many wings do you have? Write the number.

Stand with 2 friends. How many noses are in your group? Write the number.

Draw something that has 1 ear, 2 heads, and 3 feet. Show your friend your picture.

M1:L15

Application Problem

Draw 3 circles. Color 2 blue and 1 red.

Complete the number sentence: 3 = ____ + _____.

M1:L16

Application Problem

Draw 4 cups and 5 straws.

Write the number of each.

Circle the number that is more.

M1:L17

Application Problem

Finish this sentence: I could eat 5 _____. Draw a picture to show your idea.

M1:L18

Application Problem

Make a row of 3 dots.
Make another row with 3 dots right under the first one.

Count your dots.

Tell your friend how many.

M1:L19

Application Problem

Draw 5 ice cream cones.

Draw 1 more ice cream cone.

Count how many ice cream cones you drew on your paper. Write the number.

M1:L20

Application Problem

Christopher has a bag of 5 cookies and 2 other loose cookies. Draw the cookies.

How many cookies does Christopher have? Count the cookies with your partner.

Then, circle the bag of 5 cookies.

M1:L21

Application Problem

There were some children playing with marbles on the playground.

Draw a circle and show 7 of their marbles in the circle.

Count the marbles with your friend.

Talk about what would happen if someone gave the children another marble.

M1:L22

Application Problem

Draw 2 stacks of 4 blocks each.

Count your blocks. How many do you have?

Compare your drawing to a friend's.

M1:L23

Application Problem

Draw a shape that you might see as a fence at a playground. (Demonstrate, if you choose.)

Draw 8 balls inside the fence. Count the balls.

Share your counting with a friend.

M1:L24

Application Problem

Draw 5 silly shapes.

Draw 4 more silly shapes.

How many silly shapes do you have?

M1:L25

Application Problem

Make a group of 9 smiley faces. Write the number 9. Count the smiley faces by connecting them with lines.

Make sure you don’t count any of them twice!

Compare your picture with that of a friend. Discuss what would happen if you had another smiley face in your picture.

M1:L26

Application Problem

Let's build a wall! Draw a row of 5 bricks.

Build your wall by drawing another row of 5 bricks on top.

How many bricks did you draw?

M1:L27

Application Problem

Create a snowman that is 5 snowballs high.

Make a friend next to him that is also 5 snowballs high.

How many snowballs did you use? Write the number.

M1:L28

Application Problem

Draw a bracelet with 10 beads. Make sure that your bracelet is closed so the beads don't fall off!

Show your bracelet to a friend, and have her count your beads.

Did you both count them the same way?

Are there any smaller numbers inside your bracelet?

M1:L29

Application Problem

Draw 10 little dishes on your paper.

Write the numbers 1–10 on your dishes.

On some of your dishes, draw 1 scoop of strawberry ice cream. In the rest, draw 1 scoop of chocolate ice cream.

Show your treats to a friend. Do your treats look alike?

M1:L30

Application Problem

There are 4 flowers in your vase. Your friend brings you 1 more flower to put in your vase. Draw your vase with all the flowers. Write the number.

M1:L31

Application Problem

Caleb had a plate of 7 oranges to share with his friends. Draw the oranges.

Draw 1 more orange in case someone is extra hungry.

How many oranges are on the plate? Write the number.

Tell your friend: “There were 7 oranges. One more is (__).”

M1:L32

Application Problem

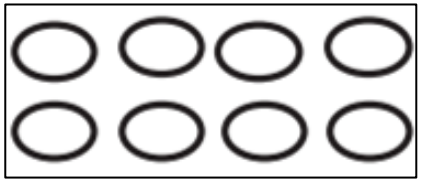
Draw 6 shirts on the board, as pictured below:

There were 6 friends on Katharine's team. Their uniforms got mixed up in the laundry, and some of the numbers washed off. Quickly draw the shirts and the numbers on the shirts to help the team!

M1:L33

Application Problem

Preparation: Draw a baking tray like the one below:



Margaret baked some biscuits for dinner. While they were cooling, her kitten jumped on the table and took one away.

Draw the tray to show how many biscuits Margaret can serve for dinner. Don’t forget to cross off the one that the kitten took! Write the number.

M1:L34

Application Problem

Draw 2 plates.

On your first plate, draw 8 grapes. On the next, draw 1 less. Write the numbers below the plates.

Now, draw 2 cups.

In the first cup, draw 6 straws. In the next, draw 1 less. Write the numbers below the cups.

M1:L35

Application Problem

Draw a snow girl that is 3 snowballs high.

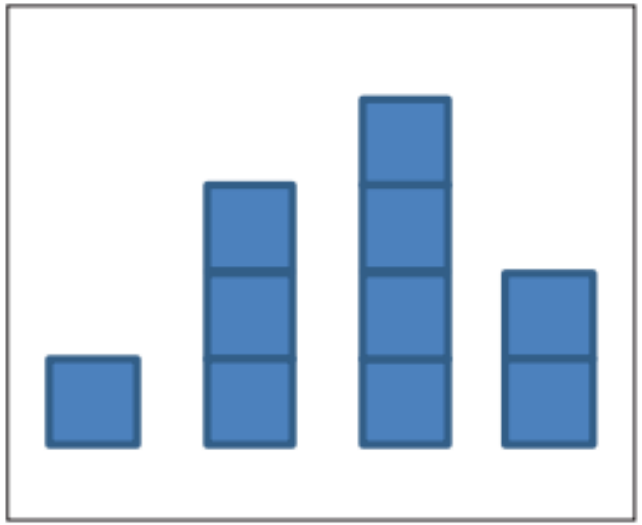
Next to her, draw a snow boy with 1 less.

How many snowballs are in your snow boy? Compare your pictures with your friend's.

M1:L36

Application Problem

Someone mixed up these towers below! Draw the towers in order so that each tower in your picture shows 1 less. Write the numbers underneath the towers.



M2:L2

Application Problem

It's pizza time! On a piece of paper, draw a large, round pizza pie. Don't forget your favorite toppings!

With your crayons, show how you would cut the pizza into enough slices for your family.

Compare you slices to those of a partner. Are they alike? Carefully describe the shape of a slice to your partner.

M2:L3

Application Problem

Design your own dollar bill! Draw your dollar bill on a piece of paper.

Whose picture will you put in the center?

Compare your dollar with your partner's. Tell him about the shape of your bill. How are your dollars alike?

M2:L4

Application Problem

Using only triangles and rectangles, design a rocket ship on your paper.

Trade rocket ships with your partner. Count how many triangles and rectangles you see in his picture. Did you use the same number of each shape?

M2:L5

Application Problem

Work with your partner. Stand somewhere in the classroom so that you are facing a wall, but your partner is facing the other way.

Tell your partner several things that you think are behind you in the room. Have him look to see if you are right. When you are done, switch places with your partner.

M2:L6

Application Problem

Have students work with a partner. Give each set of students a small ball and a cube.

We are going to do a test. Take turns with your partner. Roll the ball back and forth between you a few times. Watch the ball carefully as it rolls. Now, try to roll the block between you. Talk to your partner about what happens.

Why do you think the objects behave so differently?
What would be the best way to get the block to your partner?
Why don’t cups that have a circle on the bottom roll off the table?

M2:L7

Application Problem

Materials: (S) Small piece of modeling clay

Think about the solids you investigated yesterday. Now, listen to the riddle, and make this mystery solid with your clay:

“I am a solid that can roll. I don’t have any corners. I have zero edges. Make me!”

When you are done, show the solid to your friend. Do your solids look alike?

M2:L8

Application Problem

Materials: (S) Small ball of clay

Make a sphere with your ball of clay.
Make your ball into a cylinder.
Make your cylinder into a cube.
Make your cube into a cone.

Put your cone next to your partner's.
Partner A, put your cone above Partner B's.

M2:L9

Application Problem

Materials: (S) Small piece of paper, pencil, ball of clay

Draw one of the shapes that we have talked about this week.

Can you make a solid with your clay that has the shape you drew as one of its faces?

Share your work with your partner when you are done.

M3:L1

Application Problem

Materials: (T) Indicated photos, heavy book, piece of ribbon 1 meter long
Setup: Show students a set of photos, one of a skyscraper contrasted with a one-story building.

T: With your partner, look at the photos of the buildings. Talk about how they are the same and how they are different. What do you notice?
S: One is bigger than the other.
T: When you compare and say it is bigger, let's think about what you mean. (After each question, allow students to have a lively, brief discussion.)
T: Do you mean that it is heavier, like this book is heavier than this ribbon? (Dramatize the weight of the book and ribbon.)
T: Do you mean that it is longer, like this ribbon is longer than this book? (Dramatize the length of the ribbon.)
T: Do you mean it takes up more space, like this book takes up more space than this ribbon when it is all squished together? (Dramatize the volume of the book and ribbon.)
T: Do you mean to compare the number of things, like the number of books and ribbons? (Dramatize a count.)
T: So, we can compare things in different ways! Today, let's compare by thinking about how much longer or shorter one thing is than another thing. (Dramatize.)

M3:L2

Application Problem

Draw a picture of something you have seen that is very tall.

Compare your picture to your friend's. Is the item in her drawing taller than or shorter than yours? Are you sure? How can you find out?

M3:L3

Application Problem

Draw a monkey with a very long tail.

Draw a monkey with a very short tail.

Now, draw a yummy banana for the monkeys to share. Is the banana longer than or shorter than the tail of the first monkey? Is it longer than or shorter than the tail of the second monkey? Tell your partner what you notice.

M3:L4

Application Problem

Write the following sentence frame on the board, and then read it to the students.

I am taller than _____. I am shorter than _____.

Draw two things on your paper that would make your sentence true. Tell your sentence to your partner. Does he agree that it is true?

M3:L5

Application Problem

Write your name so that one letter is in each box. Begin with the box above the star. Don't skip any boxes!

You made a name train. Compare your train to that of your partner.

What do you notice?
Which train has more letter passengers?

M3:L6

Application Problem

Materials: (S) Crayon, paper, bag of linking cube stairs

Spread your hand out on the piece of paper, and trace around it to make your handprint. Now, take your hand off of the paper, and look carefully at the fingers in your handprint drawing. Think about which linking cube stick might be as long as your thumb. Take out that stick, and check your guess.

Were you right?
Which one would be about as long as your little finger?
Your middle finger?

Test your guesses to see if you were close. Share your discoveries with your friend. Are your friend's fingers and your fingers the same lengths?

M3:L7

Application Problem

Materials: (S) Small ball of clay

Make a little clay snake that is as long as your pointer finger. Now, make a friend for him that is as long as your pinky finger. Which one is longer? Show your creations to your partner.

M3:L8

Application Problem

Draw three things you would not mind carrying around in your backpack, even if you had to walk a long way.

Now, draw one thing that you would not want to carry around in your backpack because it might make you very tired.

Why wouldn’t you want to carry it? How is it different from the first things you drew? Talk to your partner about your pictures.

M3:L9

Application Problem

Put the following sentence frame on the board, and then read it to the students.

I am lighter than _____, but I am heavier than _____.

Draw two things on your paper that would make this sentence true for you.

Show your pictures to your partner. Does he or she agree with you? How much do you think you weigh?

M3:L10

Application Problem

Imagine that you were on a seesaw with a little kitten on the other end. Draw a picture of yourself and the kitten on the seesaw.

Which end of the seesaw would be closer to the ground? How do you know? Talk about your picture with your partner. Do your seesaws look the same?

M3:L11

Application Problem

Materials: (S) Small bag of about 10 Lego-type building blocks, balance scale for small group, 20 pennies

Use your blocks to make the heaviest building that you can. How many pennies are as heavy as your building? Turn to your friend. Talk about your different buildings and how much they weigh.

M3:L12

Application Problem

Find one small item in your backpack. Put it on the balance scale. How many pennies do you think it will take to balance your object?

Use pennies to test your guess.

Make a picture of the balance with your object and the pennies. Finish this sentence, "My item is as heavy as a set of pennies."

What do you think would happen if you put another penny on each side of the balance scale? Test your guess!

M3:L13

Application Problem

Materials: (S) Small ball of clay

With your clay, create a cup that could hold just enough milk for a little kitten to drink.

Show your cup to your friend. Do you think your cups would hold the same amount?

M3:L14

Application Problem

Materials: (S) Small ball of clay

With your clay, make a bowl big enough to hold a yummy strawberry.

Now, make a little vase just the right size for a tiny flower.

Which one do you think would have more capacity?

Compare your containers to those of your friend's. Do they look alike? Do you think hers would have more capacity?

M3:L15

Application Problem

Materials: (S) Small ball of clay and 10 beans

Use your clay to make a container just large enough to hold your 10 beans. Test to see if the beans fit! Show your work to your partner.

M3:L16

Application Problem

Materials: (S) Playing card, bag of linking cubes

How many linking cubes would you need to cover up your card? Make a guess!

Now, work with your partner to test your guess. What did you discover? How many cubes did you need? Did your friends use the same number of cubes?

M3:L17

Application Problem

Materials: (T) Music player; chairs, carpet squares, or pieces of construction paper per student; plus several more chairs than students

It's time to have a math celebration and play a game of musical chairs (or carpet squares or papers)! During the first round, make sure that there are several more chairs than students. When the students sit and notice the extra chairs, tell them, "There are not enough children to fill the chairs." Continue playing and remove a chair each round until there are just as many chairs as students. When they sit down, tell them, "There are just enough chairs!" Repeat as time permits.

M3:L18

Application Problem

Draw four little mice. Draw some pieces of cheese so that each mouse can have one. Use a ruler to draw a line between each mouse and its cheese. Are there just enough pieces of cheese? Talk to your partner about how you knew how many pieces of cheese to draw.

M3:L19

Application Problem

Materials: (S) 1 small ball of clay

Use your clay to make six little pretend pancakes.

How many people could you serve with your pancakes if you were going to have a tiny pancake party?

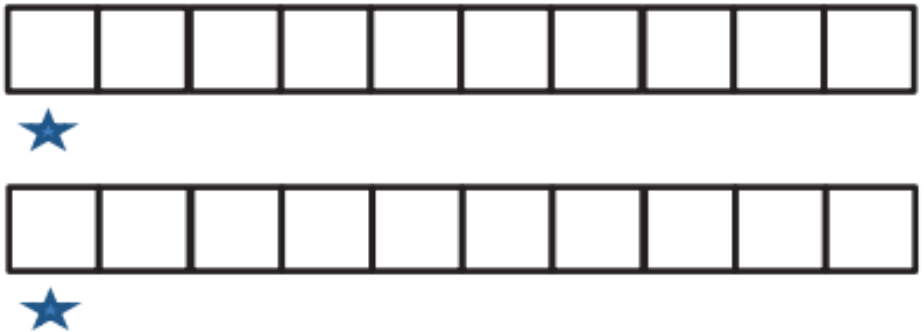
What if another person joined them?

Put your clay back together into a ball. Make new tiny pancakes so there are just enough. Talk about your cooking with your friend.

M3:L20

Application Problem

Materials: (S) Square path
letter trains (Template)



Write your first name in the top set of boxes, one letter in each box. Start at the box above the star. Write your last name in the bottom set of boxes, one letter in each box. Start at the box above the star.

Which of your trains has more letter passengers? Which passenger train is longer? Which of your trains has fewer passengers? Which passenger train is shorter?

Talk about your trains with your partner. Are your partner's trains similar to yours? Did anyone's train not have enough room for all of the letter passengers?

M3:L21

Application Problem

Materials: (S) Linking cubes, dry erase marker

Use your dry erase markers to write the letters of your name on linking cubes.

Make a train out of your cubes. Compare your train to at least one friend's train. Which train is longer? Count the cubes in your trains. Which number is more? Which number is less?

M3:L22

Application Problem

Materials: (S) 7 linking cubes, small piece of clay

Pretend your linking cubes are little baskets. Use your clay to make as many balls as there are baskets. Check your work by putting a ball in each basket. Do you have just enough? Score 1 point for every basket you made!

M3:L23

Application Problem

Draw 9 birds.

Draw enough worms so that each bird gets one, but also draw 1 extra worm for a snack for later.

Use your ruler to match each bird to its worm.

How many birds are there? Write the number. How many worms are there? Write the number. Show your picture to a friend.

M3:L24

Application Problem

The birds are back! Draw 9 birds.

Each of them wants a worm for lunch today except for one—she has become a vegetarian.

Draw just enough worms so that each bird who wants one can have one.

How many birds did you draw? Write the number. How many worms did you draw? Write the number.

M3:L25

Application Problem

Materials: (S) Bag of 10 pennies, bag of 8 linking cubes

Put your pennies in a row.

Now, put one linking cube on top of each penny.

Are there enough cubes to cover each penny? Talk to your friend about which has more, the set of cubes or the set of pennies.

M3:L26

Application Problem

Draw how many people are sitting at your table. Draw them in a row or line.

Now, draw to show how many pencils are at your table. Draw them in a row or line.

Draw lines to match each person to one pencil. Remember, each one gets only one partner! Are there more pencils or people? Show your work to your partner.

M3:L27

Application Problem

Materials: (S) Pattern blocks, small bucket per pair

Work with a partner. Take one handful of pattern blocks out of the bucket. Let your partner do the same. Compare your handfuls of pattern blocks. Who has more? How do you know? Put the blocks back, and try the game again.

M3:L28

Application Problem

Materials: (S) Paper, crayons, and a small ball of clay

Draw four snowmen on your paper.

With your clay, make little hats and put them on the snowmen. Now, make two more hats for the snowmen that melted yesterday.

How many snowmen did you draw?
How many hats did you make?
Which number is greater? Which number is less?

M3:L29

Application Problem

Demoss had a very small carton of orange juice. His mom poured it into a very tall glass without spilling any juice. Close your eyes, and think about what that might look like.
Draw the little carton of juice.
Now, draw the juice after she poured it into the big glass.

Does Demoss have more or less juice, or does it just look different? Compare your drawings with your partner's. Are both of your glasses full? Did the glass hold all of the juice?

M3:L30

Application Problem

Imagine a balance scale. Can you see it?

Now, imagine putting one big ball of clay on one side and four small balls of clay on the other. If the big ball is as heavy as the four small balls put together, then what would the balance scale look like? Draw it.

M3:L31

Application Problem

Materials: (S) Bag of pony beads, 1 foot of elastic string or yarn with a bead tied on one end to prevent the beads from falling off

Using your elastic or your yarn, make a string of beads that is as long as your hand. Turn to your partner to talk about how you decided how long to make your string. Compare your strings.

Are they the same length? Tie the ends of your string together to make a bracelet!

M4:L1

Application Problem

Materials: (S) Personal white board

Julia went to the beach and found 3 seashells. Her sister Megan found 2 seashells.

Draw the seashells the girls found.

How many did they find in all? Talk to your partner about how you know.

M4:L2

Application Problem

Materials: (S) 5 pennies

Margaret and Caleb discovered that if they put their money together, they would have the 5 pennies they need to buy some gum. Yum!

Put 5 pennies in the middle of your desk. Now, slide some to one side of your desk to show how much money Margaret might have had. Put the other coins on the other side of the desk to show how much money Caleb might have had.

Check with your friend to see how he showed Margaret's and Caleb's coins. What do you notice?

Slide the coins together again to make sure you have enough for the gum. Now, act out the story again. Could you take apart the pennies in a different way?

M4:L3

Application Problem

Materials: (S) Set of 5 linking cubes, number bond (Lesson 1 Template 2) inserted into personal white board

Chris has 3 baseball cards. Use your cubes to show his cards.
Katharine has 2 baseball cards. Show her cards with your cubes.
Now, with your cubes, show how many cards they have together.

Make a picture on your personal white board to show the story. Can you make a number bond picture about your story? Talk about your work with your partner.

M4:L4

Application Problem

Materials: (S) Small piece of clay, paper, pencil

Anthony had 5 bananas. Make the 5 bananas with your clay.

He wanted to share the bananas with one of his friends.

Draw two plates on your paper. Put the bananas on the plates to show one way he could share the bananas with his friend. Draw a number bond to show how he shared his 5 bananas.

Turn and talk with your partner. Did she do it the same way? How many different ways can you find to share the bananas? What if there were only 4 bananas?

M4:L5

Application Problem

Materials: (S) Personal white board

Windsor the puppy had 5 juicy bones. He buried some of them in the yard and put some of them by his dish. Draw his bones.

Compare your picture to your friend's. Did you make your pictures the same way? Talk to your friend about how your pictures are alike and how they are different. Make a number bond about your problem.

M4:L6

Application Problem

Materials: (S) 5-stick of linking cubes, pencil, paper

Play a game called Snap with your friend! Show him your 5-stick.

Now, put your linking cube stick behind your back. When he says, “Snap!” quickly break your linking stick into two parts. Show him one of the parts. Can he guess the other one? If not, show him.

Draw a number bond to show what you did with your cubes. Then, it is his turn! If you have time, play it with a 4-stick, a 3-stick, and a 2-stick!

M4:L7

Application Problem

Materials: (T) Bell or other gentle noisemaker or instrument

Close your eyes, and count each time that I clap. (Clap 5 times; pause, and then clap 1 more time.) Open your eyes. How many claps did you hear? (Allow time for students to answer.)

Let's do it 1 more time. (Repeat.) How many claps did you hear? What is 1 more than 5?

Repeat this exercise several times, using claps and instrument sound parts of 4 and 2, 3 and 3, 2 and 4, and 1 and 5. Now, try the game with your partner! Take turns clapping different number partners for 6.

M4:L8

Application Problem

Materials: (S) Small ball of clay, personal white board
Ming has 5 raisins. Represent her raisins with the clay.
Dan has 2 raisins. Represent his raisins, too. How many raisins are there in all?

- Put Ming's raisins into a 5-group. Now, put Dan's raisins in a row underneath Ming's raisins. Do you still have 7 raisins?
- Hide the bottom 2 raisins. How many raisins do you see now?
- Talk about the raisins with your friend.
- (If time allows, include the following.) Draw a number bond to represent Ming's and Dan's raisins.

M4:L9

Application Problem

Materials: (S) Two linking cube 5-sticks, 1 each of 2 colors

Take one of your 5-sticks. Add 1 more cube. How many cubes are in your stick now? Add 1 more cube. How many are in your stick now? Add another cube. Now, how many cubes are in your stick?

Take your 8-stick apart. Work with your partner to make two rows of cubes out of your stick. Make sure you have the same number of cubes in each row. How many cubes are in each row?
Yes, you took your 8 and made 2 rows of 4. Now, take your cubes, and make a tiny row of 2. Make another tiny row of 2 underneath. Keep going until all of your cubes are used up. How many cubes are in each row? How many tiny rows do you have? You made your 8 into 4 rows of 2. You made your 8 into 2 columns. Talk to your partner about the ways you made your 8 look.

M4:L10

Application Problem

Materials: (S) 6-stick of linking cubes (per pair), personal white board

Time for a game of Snap! Hold your 6-stick behind your back. When your partner says, “Snap!” break your 6-stick into two parts. Show your friend one of the parts, and see if she can guess the other part. If she can’t guess, show her the missing piece.

On your personal white board, draw the number bond about your game. Then, it will be your turn. Try it again with a 7-stick and then an 8-stick!

M4:L11

Application Problem

Materials: (S) Personal white board

Nesim has 5 toy cars. Draw Nesim's cars.

Awate has 3 toy cars. Draw a picture to show his cars, too.

How many cars do they have together? Can you show the number bond to go with the story? Talk with your partner about your work.

M4:L12

Application Problem

Materials: (S) Personal white board

5 bees were buzzing around a tasty flower. Draw the flower and the bees.

2 more bees came to join them. Draw the new hungry bees.

We had 5 bees. Now we have 2 more bees! Use your picture to show how many bees are enjoying the flower together. Talk to your partner about the picture. Can you write a number bond to go with the story?

M4:L13

Application Problem

Materials: (S) Personal white board, 6 linking cubes

4 silly seals were splashing in the water. Show the silly seals with your linking cubes.

2 more silly seals came to splash. Show the new seals.

How many silly seals are splashing in the water now? Use your cubes, and talk to your partner about the seals. Can you write about the silly seals in a number bond?

M4:L14

Application Problem

Materials: (S) Personal white board

Larry the train is pulling 7 cars. 3 cars are full, and 4 cars are empty. Draw the train, and make a number bond about your picture.

Discuss your work with your partner.
Extension: Can you make a number sentence to go with your picture?

M4:L15

Application Problem

Materials: (S) Personal white board

You are having a party! You get 8 presents. 2 presents have stripes, and 6 presents have polka dots. Draw the presents, and write the number sentences two different ways on your personal white board.

M4:L16

Application Problem

Materials: (S) 10 linking cubes

3 airplanes were flying in the air. Use your cubes to show the planes.

3 more airplanes came to join the flying fun. Show the airplanes with your cubes.

Now, with your cubes, show how many airplanes were flying in the air. Talk to your partner about what the number sentence would look like.

M4:L17

Application Problem

Materials: (S) Personal white board

Marissa is creating designs with shapes. She has 5 triangles and 2 circles. Draw the shapes, and write a number sentence.

Talk to your partner about your picture and number sentence.

M4:L18

Application Problem

Materials: (S) Personal white board

Sam bought 8 pieces of fruit at the farmers' market. He loves apples and oranges, so he bought some of each. Draw a plate, and show his fruit on the plate. Don't lose any!

Show your work to your friend. Does her plate look the same? Can you make a number bond and number sentence about your picture?

M4:L19

Application Problem

Materials: (S) Small ball of clay

The mice are hungry today! Make 5 little pieces of cheese out of your clay, and put them on your desk.

Pretend that a pair of little mice came to your desk (a pair means 2 mice!) and that each of them stole a piece of cheese. Take away their pieces to show that they ate them. How many pieces are left?

Now, start with 4 morsels of cheese, and act out the story again. How many are left?

Talk about the mice and the cheese with your partner. Did he have the same number of pieces left each time? What do you think would happen if you had only 3 pieces of cheese before they came?

M4:L20

Application Problem

Materials: (S) Paper and pencil or personal white board

Draw the 5 monkeys from yesterday's song on your paper.

Decide how many monkeys were sensible and stayed on the bed, and cross off the monkeys who fell off and bumped their heads. With your math words, think about how you would tell the story. How many did you start with? How many did you take away? How many were left?

Share your picture with your partner, and use your math words to tell your story. Did your partner do it the same way? How are your number stories different?

M4:L21

Application Problem

Materials: (S) Personal white board or pencil and paper

5 little green frogs were sitting on the side of the pond. Draw the frogs.

It was so hot that 2 of the froggies decided to go for a swim! Cross out the frogs in your picture to show the ones who hopped into the pond. How many frogs were still by the side of the pond?

Talk to your partner about the story. How can you write about your story in a number sentence?

M4:L22

Application Problem

Materials: (S) Linking cube 6-stick per pair, personal white board

T: Let's play a game of Snap! Count the cubes in your stick. How many are you starting with?
S: 6.
T: Put the stick behind your back. When your partner says, "Snap!" break your stick. Show him how many cubes you have left.
T: Can he figure out how many are still behind your back? If not, show him.
T: Make a number bond about your snap on your personal white board.
T: Can you and your partner think of a take away number sentence to tell about the snap?

M4:L23

Application Problem

Materials: (S) Personal white board

Noah had 7 red balloons. 2 balloons popped as he and his kitties played with them. Draw Noah's balloons.

How would you show that 2 of them popped in the picture? Can you make a number sentence about your story? Try to draw a number bond to go with it!

M4:L24

Application Problem

Materials: (S) Personal white board

Robin had 8 cats in her house. 3 of the cats went outside to play in the sunshine. Draw her cats.

Use your picture to help you draw a number bond about the cats. How many cats were still in the house? Can you make a number sentence to tell how many cats were still inside?

Share your work with your partner. Did he do it the same way?

M4:L25

Application Problem

Materials: (S) Personal white board

There were 9 flowers in Casey's beautiful garden. She had 2 vases. Draw 1 way she could have put all of the flowers into the vases.

Show your picture to your partner. Did he draw the flowers in the vases the same way? Are both ways right? Are there other ways you could have shown the flowers?

M4:L26

Application Problem

Materials: (S) Paper, green and blue crayons

It is laundry day. We have 9 extra socks! Some are green, and the rest are blue. Draw the set of green socks and the set of blue socks.

Make a number bond to help tell about your picture.

Turn and talk to your partner about your drawings and number bonds. Do they look alike? Are your sets of socks different? Turn your paper over, and show the story a different way.

M4:L27

Application Problem

Materials: (S) Paper, crayons

You are having a birthday party! You need 10 party hats for your friends. Draw 10 simple hats. Color some hats red and some blue.

Make a number bond about your picture. Turn and talk with your partner. Do your pictures look the same? Explain to your partner how you decided which way to color your hats.

Talk about how your number bonds are the same or different.

M4:L28

Application Problem

Materials: (S) Small ball of clay, personal white board

Use your clay to make 10 tiny grapes. With your marker, draw a pretty plate on your personal white board.

Now, put some of the grapes on the plate. How many grapes do you have in all? How many grapes are on the plate? How many are not on the plate?

Draw a number bond about your work, and talk about it with your partner. Did she do it in the same way? Take the grapes off, and try again!

M4:L29

Application Problem

Materials: (S) 9 pennies, pencil, paper

Emma had 9 pennies. Show her pennies in the middle of the desk.

She wanted to use 4 of her pennies to buy some gum and 5 pennies to buy a balloon. Count and slide apart the pennies she needs to buy the gum and the balloon.

On your paper, show the number bond that corresponds to her pennies now.

Now, slide your groups of pennies together again. How many pennies in all? Would you need to create a new number bond about what you just did? Turn and talk to your partner about your work.

M4:L30

Application Problem

Materials: (S) Tree (Template), 10 linking cubes, paper and pencil or personal white board

Pretend your linking cubes are pears from the pear tree! How many pears do you have in all? Using your linking cubes, put 5 pears in the tree and 5 pears on the ground. Make a number bond about the pears in your picture. Use your math words to tell your partner about the pears. Can you think of a number sentence? Now, show another pear falling out of the tree. How many cubes are in the tree now? Would your number bond change? Is there a different number sentence you would use to tell about what you just did?

Talk about your ideas with your partner. (If students focus on the pears in the tree, e.g., 5 – 1 = 4, confirm that work, and ask them to show a number bond or number sentence that includes all of the pears on the page.)

M4:L31

Application Problem

Materials: (S) Paper, crayons, pencil

5 children were playing soccer in the park. Draw the children.

4 more children came to play. Draw the new players.

How many children were playing soccer? How did you know? Turn and talk to your partner about your answer. Do you agree?

M4:L32

Application Problem

Materials: (S) Paper, crayons

Chen had 9 pencils. Some of his pencils were red, and some were blue. Draw Chen's pencils.

Make a number bond about your pencils.

Now, turn and talk to your partner about your pictures and your number bond. Do your pictures look the same? Are your number bonds the same? Are they both correct?

M4:L33

Application Problem

Materials: (S) 9 linking cubes and 1 construction paper “picnic blanket” (per pair), paper

You are going to play a game with your partner. Partner A, pretend your linking cubes are ants and your paper is a picnic blanket. Count your ants, and put them all on the picnic blanket. Now, pretend some of the ants crawled off the blanket. Slide some of your ants off the blanket to show the ones that crawled away.

Partner B, your job is to make a number bond showing the 9 ants that were on the blanket, the ones that stayed, and the ones that crawled away.

Partner A, check the number bond to see if you agree. Now it is Partner B’s turn to show some ants leaving the blanket!

M4:L34

Application Problem

Materials: (S) Personal white board

Tony had 8 checkers. His friend took 3 away. How many checkers did Tony have left? Draw a picture of the story.

Make a number bond and a number sentence about the story. Show your work to your friend. Did you both do it the same way?

M4:L35

Application Problem

Materials: 9 pennies, personal white board

Steve had 9 pennies. He wanted to put some pennies into each of his two pockets. Use your pennies to show one way he could have separated them.

Make a number bond about your idea.

Show your number bond to your partner. Did she do it the same way? How many different ways can you separate the pennies?

M4:L36

Application Problem

Materials: (S) 10 linking cubes, personal white board

Martin had 10 building blocks. Pretend your linking cubes are his blocks. Count to make sure there are 10. He shared 4 blocks with his sister. Move 4 blocks to show the ones he shared. How many blocks did he still have?

Make a number bond about the story.

Now, make a number sentence. Show your work to your partner.

Did she do it the same way? Put your blocks back together. Act out the story again, sharing a different number of blocks this time. How does your number sentence change?

M4:L37

Application Problem

Materials: (S) Small ball of clay

Chico the puppy had 8 tennis balls. His owner threw 2 of them, but Chico brought them right back! Make 8 balls with your clay.

Show the story with the clay balls you created. (But don't throw them! Remember, he brought them right back!)

Did Chico lose any of his tennis balls? Did he find any more balls? How many balls does Chico have at the end of the story?

Turn to your partner, and talk about how you might be able to create number sentences about Chico's adventures. Then, act out the story with different numbers of balls.

M4:L38

Application Problem

Materials: (S) 10 linking cubes, small square of blue paper to represent a watering hole (optional)

Pretend your cubes are dinosaurs. 1 dinosaur went to the watering hole because he was thirsty. Move 1 of your cubes to the watering hole to show the thirsty dinosaur going to get his drink. 1 more dinosaur got thirsty, too. Add another cube to the one by the watering hole. How many thirsty dinosaurs are there now?

Turn to your partner, and talk about an addition sentence that would tell what you just did. Another dinosaur got thirsty! Take her to the watering hole, too! Now how many dinosaurs are at the watering hole? Talk to your partner about the new addition sentence. Keep acting out the story until all the dinosaurs are drinking water. Do you notice any patterns?

M4:L39

Application Problem

Tim had 10 friends. Draw his friends.

Tim had 7 oranges. He wanted to give an orange to each of his friends. Does he have enough? Draw his 7 oranges.

Now, draw more oranges so there are enough for all of his friends.

Circle the new oranges. How many more oranges did he need? Check your work by drawing a line to match each friend with an orange. Now, show your work to your friend. Did she do it the same way? Talk about what would have happened if Tim had started with 8 oranges.

M4:L40

Application Problem

Materials: (S) Personal white board

Ming has 3 baseball caps, but there are 10 girls on her team. Use your personal white board and a 5-group drawing to find out how many more caps her team will need.

Make a number bond about your picture. Share your work with your partner. Do your pictures and number bonds look the same?

M5:L1

Application Problem

Marta loves to share her peanuts at recess. She counted 10 peanuts into the hands of her friend Joey. Draw a picture of the peanuts in Joey's hands.

M5:L2

Application Problem

Lisa counted some sticks into one pile of 10. She counted 5 other sticks into another pile. Draw a picture to show Lisa's piles of sticks.

(Extension: Have early finishers draw Lisa's piles on another day when she made one pile of 10 sticks and one pile of 8 sticks!)

M5:L3

Application Problem

Each gingerbread man got 10 sprinkles as buttons with 2 sprinkles to show the eyes. Draw to show the 12 sprinkles as 10 buttons and 2 eyes.

M5:L4

Application Problem

At recess, 17 students were playing. 10 students played handball while 7 students played tetherball. Draw to show the 17 students as 10 students playing handball and 7 students playing tetherball.

M5:L5

Application Problem

Pat covered 16 holes when playing the flute. She covered 10 holes with her fingers on the first note she played. She covered 6 holes on the next note she played. Draw the 10 holes. Draw the 6 holes. Use your drawing to count all the holes the Say Ten way.

M5:L6

Application Problem

There are 18 students: 10 girls and 8 boys. Show the 18 students as 10 girls and 8 boys.

M5:L7

Application Problem

Materials: (S) Hide Zero cards: 1 Hide Zero 10 card (Lesson 6 Template 2) and 5-group cards 1–9 (Lesson 1 Fluency Template 2)

Gregory drew 10 smiley faces and 5 smiley faces. He put them together and had 15 smiley faces. Draw the 15 smiley faces as 10 smiley faces and 5 smiley faces.

Then, draw 15 with Hide Zero cards when the zero is hiding and when the zero is not hiding.

M5:L8

Application Problem

Peter drew a number bond of 13 as 10 and 3. Bill drew a number bond, too, but he switched around the 10 and 3. Show both Bill's and Peter's number bonds.

Draw a picture of thirteen things as 10 ones and 3 ones.

Explain your thinking to your partner about what you notice about the two number bonds.

M5:L9

Application Problem

A Pre-Kindergarten friend named Jenny drew 15 things with 1 chip and 5 more chips. Draw 15 things as 10 ones and 5 ones, and explain to your partner why you think Jenny made her mistake.

M5:L10

Application Problem

Ms. Garcia is painting her fingernails. She has painted all the nails on her left hand except her thumb.

How many more nails does she need to paint?

How many does she have left to paint after she paints her left thumb? Draw a picture to help you.

M5:L11

Application Problem

Mary has 10 toy trucks. She told her mom she likes to spread them out on the floor. She said she doesn't like to put them away neatly in the little toy box because then there are fewer toys. Draw a picture to prove to Mary that the number of toy trucks is the same when they are all spread out as when they are in the little toy box.

M5:L12

Application Problem

Peter was sitting at lunch eating his french fries. He counted 8 left on his plate. He ate 1 french fry. He ate another french fry. Then, he ate another french fry. How many french fries did Peter have then?

M5:L13

Application Problem

Vincent's father made 15 tacos for the family. Show the 15 tacos as 10 tacos and 5 tacos. Draw a number bond to match.

M5:L14

Application Problem

Eva put her 12 cookies on her cookie sheet in 2 rows of 6. Draw Eva's cookies.

Show her 12 cookies as a number bond of 10 ones and 2 ones using your Hide Zero cards. Then, find and circle the 10 cookies that are inside the 12 cookies.

Have students explain how the parts of the number bond match the parts of their drawing and the Hide Zero cards with a partner.

M5:L15

Application Problem

Materials: (S) Donuts (Template 1), 14 cubes

Mr. Perry is decorating donuts. He puts 14 little dots of chocolate in rows.

Show him an idea about how to put the 14 dots in a circle on his donut.

Use the cubes first, and then draw the chocolate dots on his donut.

Show the total number of dots of chocolate with a number bond and the Hide Zero cards.

M5:L16

Application Problem

Materials: (S) 2-hand cards (Template)

The students in Pre-Kindergarten are making handprints. 7 students are putting their handprints on a poster board. How many fingers will show on the poster? Use the 2-hand cards to help find out.

M5:L17

Application Problem

Sammy's mom has 10 apples in a bag. Some are red and some are green. What might be the number of each color apple in her bag?

There is more than one possible answer. See how many different answers can be found. Show the answers with number bonds. Label the parts as R and G.

M5:L18

Application Problem

Susan is putting 9 flowers in 2 vases. Draw a picture to show a way she might do that.

Make a number bond and a number sentence to match the idea. (Extension: See if there is another way to put the flowers in the vases.)

When students have finished, have them compare their work with another student. Are their ways of showing the flowers the same? Why or why not? How is the flower problem similar to the apple problem from yesterday?

M5:L19

Application Problem

The light is out, and it's dark. Peter knows that he left 7 blue and green beads for his crafts on his desk. But he can't see how many are blue or how many are green in the dark! Draw a picture to show what the colors of his beads might be when he turns on the light.

When students have finished, have them compare their work with another student. Is their way of showing the beads the same? Why or why not? How is this problem like the problems in previous lessons with the flowers and the apples?

M5:L20

Application Problem

Each student was given 6 colored pencils and 4 regular pencils. How many pencils did each student get? Draw a picture and a number bond, and then write a number sentence.

M5:L21

Application Problem

Peter saw 8 puppies at the pet store in a cozy cage. While he was watching them, 2 hid in a little box. How many puppies could Peter see then? Draw a picture, and write a number bond and number sentence to match the story.

M5:L22

Application Problem

Lisa has 5 pennies in her hand and 2 in her pocket. Matt has 6 pennies in his hand and 2 in his pocket. Who has fewer pennies—Lisa or Matt? How do you know?

M6:L1

Application Problem

Materials: (S) Markers, paper

We are going to be talking about shapes again! Draw several things you saw this past week that looked like shapes you know.

What are the different shapes called?

Share your picture with your partner. Talk about each of the shapes and how you knew its name. Does your partner agree with you?

M6:L3

Application Problem

Materials: (S) Geoboard and rubber bands per pair (or dot paper, markers, and ruler if geoboards are not available)

You have a challenge today! Work with your partner. On your geoboard, make a shape with three sides.

Now, leave your shape on your board, and let your partner make a three-sided shape as well. Do they look the same? Name the shapes.

Remove your shapes from the geoboard. Now, make a shape with four sides. Have your partner make another four-sided shape. Do they look alike? Name the shapes. Remove your shapes from the geoboard. Try it with five sides! Then, six! How far can you and your partner go?

M6:L4

Application Problem

Materials: (S) Personal white board

First, draw 3 three-sided shapes on your personal white board.

Second, draw 4 four-sided shapes on your paper.

Third, draw a number bond, and write a number sentence to tell how many shapes you have in all.

Share your work with your partner. Do your shapes look the same? Do your number bonds look the same? How about your number sentences?

M6:L5

Application Problem

Materials: (S) Personal white board

Listen carefully to my instructions. You are going to draw a house! First, draw a square to make the big part of your house. Second, use a triangle to make a roof. Third, use a shape of your choice for a door. Fourth, find somewhere in your picture where you can use two more squares or rectangles. Fifth, use a circle somewhere in your scene. Sixth, find a place where you could draw a hexagon in your scene.

Take another minute to finish your scene with more shapes and details. Don't forget to draw yourself! Now, show your picture to your partner. Tell her about each of your shapes. Do your houses look alike? How did you use shapes differently in your pictures?

M6:L6

Application Problem

Materials: (S) Personal white board

You are going to be a detective today! First, look around the classroom to see if you can find things made of more than one shape, like we did yesterday. Second, draw one thing on your personal white board. Third, use your marker to draw the shapes inside. If necessary, give hints about items such as tiles, bricks, windowpanes, and so on. Encourage students to look for and highlight the shapes within shapes on their boards.

T: Turn and talk to your partner about the hidden shapes that you found!

M6:L7

Application Problem

Materials: (S) Personal white board, ruler

T: Pretend you are having a party. Draw a big rectangle on your personal white board to show a delicious pretend chocolate cake.
T: Now, use your ruler, and draw lines to show how you would slice it to share the cake with the party guests. Where would you draw the lines? How many pieces did you make?
T: Compare your cake to your partner's. Did you both do it the same way? Who has more pieces?