



# KINDERGARTEN SUPPLEMENT

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## Set D1 Measurement: Length

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### Skills & Concepts

- ★ compare and order two or more objects according to length

## **Bridges in Mathematics Kindergarten Supplement**

### **Set D1** Measurement: Length

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Prepared for publication on Macintosh Desktop Publishing system.

Printed in the United States of America.

P201304

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*Bridges in Mathematics* is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

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# Set D1 ★ Activity 1



## ACTIVITY

### Longer, Shorter or the Same?

#### Overview

Students compare the lengths of different pieces of ribbon, yarn, or string.

#### Skills & Concepts

- ★ compare and order two or more objects according to length

#### You'll need

- ★ ribbon or rug yarn in 4–6 different colors (see Advance Preparation)
- ★ lunch sack or small gift bag
- ★ 12 index cards or 3" × 5" pieces of light-colored construction paper
- ★ wide-tipped felt marker

**Advance Preparation** Cut 6 different lengths of ribbon or rug yarn, none shorter than 5" and none longer than 18". Use a variety of colors. Then cut two 8" and two 12" lengths, using a different color for each of the 4 lengths. Place all the pieces in the sack or bag except the two 8" lengths.

#### Instructions for Longer, Shorter or the Same?

1. Gather children to your discussion circle. Drop the two pieces of 8-inch ribbon or yarn in the middle of the circle. Ask students to predict which is longer. Then ask them to help you find out for sure. What do you need to do to compare these 2 lengths?

**Students** *Hold them up together.*

*Put them down on the rug right together so you can see.*

*I can just tell. It's the white one!*

2. Use their suggestions to compare the 2 lengths. Don't match them at the ends unless the children tell you to do so. If they don't correct you, press the issue.

**Teacher** *You told me to put the ribbons side by side on the rug. Can we tell which is longer now?*



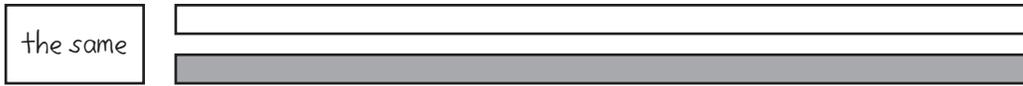
**Students** *The white one!*

*No, the blue one! You can see it's longer because it sticks out more!*

*You have to make them the same at the end or you can't tell.*

3. Match the two ends of the ribbon or yarn and ask students to compare the length now. Which is longer? Write a label on an index card and place it beside the pair of lengths.

**Activity 1** Longer, Shorter or the Same? (cont.)



**Students** *They're the same!*

*You can see now for sure because you put them together at the end.*

4. Now show students the bag of ribbon or yarn lengths you've prepared. Invite a helper to pull one from the bag and stretch it out in the middle of the circle.

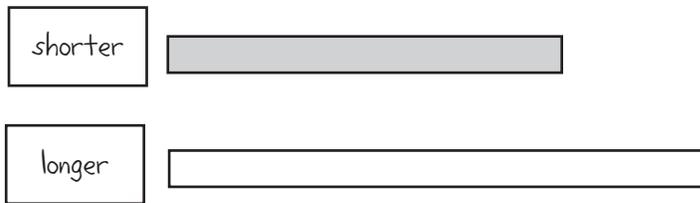
5. Ask a different helper to pull a second length from the bag and hold it up. Have students predict whether it's longer than, shorter than, or the same as the one on the rug. How can they find out for sure?

**Students** *Put them together on the rug.*

*Make sure they're the same at the end!*

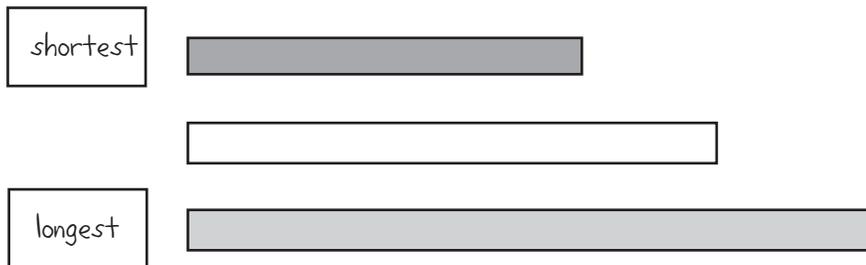
*I can already tell that the red one is longer.*

6. After the 2 lengths have been compared, write a label for each on an index card and have 2 helpers set the labels where they belong.



7. Repeat steps 4–6 until the class has compared and labeled all the lengths of ribbon or yarn in the bag.

8. Gather up all the lengths and put them back in the bag as helpers gather the labels for you. Ask 3 different helpers to pull a length from the bag, and then work with input from the class to order and label them from shortest to longest.



**Extensions**

- Make the bag of ribbon or yarn lengths and the labels available during Work Places so pairs of students can play the game on their own. (You'll want to add another "same as" label to the collection in case students pull out both pairs of equal lengths.)
- Invite students to place 4, 5, 6, or perhaps all of the strips in order from longest to shortest.

# Set D1 ★ Activity 2



## ACTIVITY

### How Long is the Teacher's Necklace or Necktie?

#### Overview

Students each cut a piece of string to approximate the length of your necklace or necktie, compare it to find out, and post it on a chart to show the results.

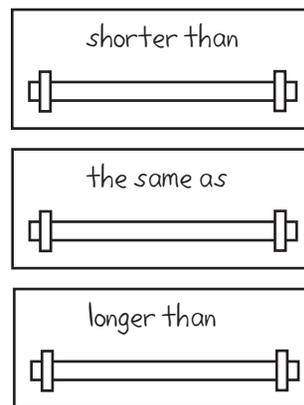
#### Skills & Concepts

- ★ compare and order objects according to length

#### You'll need

- ★ a necklace or a necktie (see Advance Preparation)
- ★ a ball of string for each group of 4 children
- ★ scissors (class set)
- ★ 3 pieces of 6" x 12" construction paper (see Advance Preparation)
- ★ masking tape (see Advance Preparation)

**Advance Preparation** Label each piece of construction paper as shown below. Then run a length of masking tape, *sticky side out*, along the bottom of each sheet and fasten the ends with short strips of tape. Post these on the whiteboard where the children can reach them easily. Wear a necklace or necktie to class the day you conduct this activity.



#### Instructions for How Long is the Teacher's Necklace or Necktie?

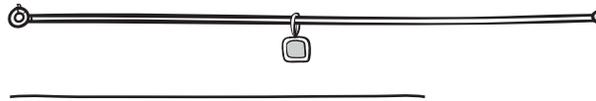
1. Gather children to your discussion circle. Draw their attention to your necklace or necktie. Ask them to use their arms to show how long they think it is.
2. Then remove the necklace or tie from your neck and stretch it out in the center of the circle where everyone can see it. Invite the children to make new estimates, again using their arms to show how long they think it is.

**Activity 2** How Long is the Teacher's Necklace or Necktie? (cont.)

3. Show the children a ball of string and a pair of scissors. Explain that each of them is going to cut a piece of string they think matches the length of your necklace or tie. After they've cut their string, they're going to compare it to your necklace or tie and fasten it to one of the three charts you've posted at the whiteboard.

4. Demonstrate the process yourself by cutting a piece of string you estimate to be about the same length as your necklace or tie. Then work with input from the class to compare the two.

**Teacher** *Is my string shorter than, longer than, or the same as my necklace?*

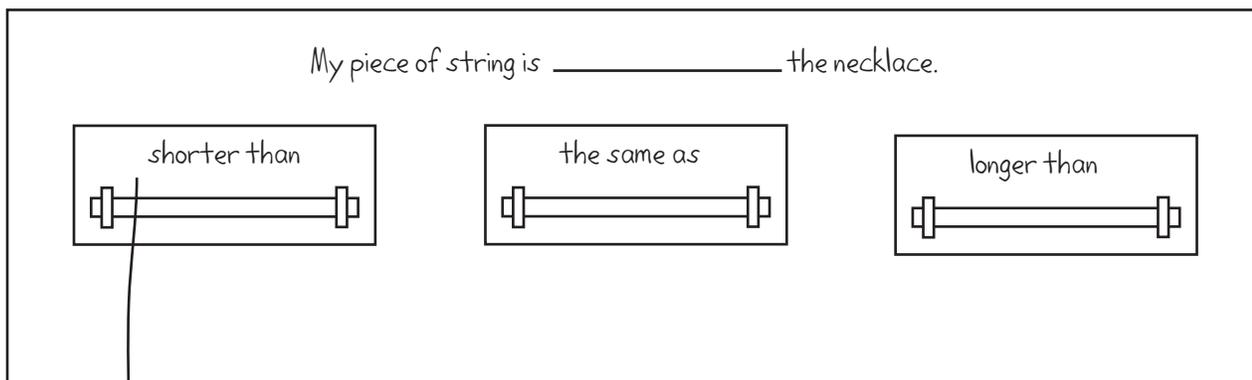


**Students** *It's shorter!*

*Try it again!*

*Can I try?*

5. Work with students' help to caption the charts at the whiteboard, as shown below. Then fasten your string to the appropriate chart by pressing it against the sticky-sided masking tape.



6. When students understand what to do, have them go back to their tables and help one another each cut a length of string they think will match the length of your necklace or tie. As they finish, have them hang the string they've cut around the back of their neck, just as a tailor might wear a measuring tape, and go to one of the Work Places. Invite them a few at a time to compare their string to your necklace or tie and hang the string on the appropriate chart.

7. Discuss the results with the class at a later time. How many students cut strings that were shorter than, the same as, or longer than your necklace or tie? Which chart has the most strings? How can they tell for sure?

**Extension**

- Repeat this activity later in the year with something else that might appeal to your students. (Anything you wear or own is almost sure to interest them. You may even have a parent who's willing to bring a pre-crawling baby to class to be measured. If you use blue masking tape to mark the length of the baby on the floor, students can cut string to approximate the length of the baby.)

# Set D1 ★ Activity 3



## ACTIVITY

### Compare, Spin & Win

#### Overview

The teacher plays a whole-group game with the class to give children more practice comparing lengths.

#### Skills & Concepts

- ★ compare and order two or more objects according to length

#### Recommended Timing

Anytime after Set D1 Activity 1

#### You'll need

- ★ Length Comparison Spinner (page D1.7, see Advance Preparation)
- ★ the lengths of ribbon or rug yarn from Set D1 Activity 1
- ★ lunch sack or small gift bag

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**Advance Preparation** Follow the instructions on the blackline on page D1.7 to prepare a spinner for this game.  
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#### Instructions for Compare, Spin & Win

1. Gather children to your discussion circle. Show them the bag containing lengths of ribbon or yarn, and explain that you're going to use them to play a game today. Pull one of the lengths out of the bag and stretch it out in the middle of the circle. This is your string.
2. Ask a helper to pull a second piece of ribbon or yarn out of the bag for the class. Have students predict whether their piece is longer than, shorter than, or the same as yours. Then ask the helper to lay the students' piece beside yours and have the class compare the two.



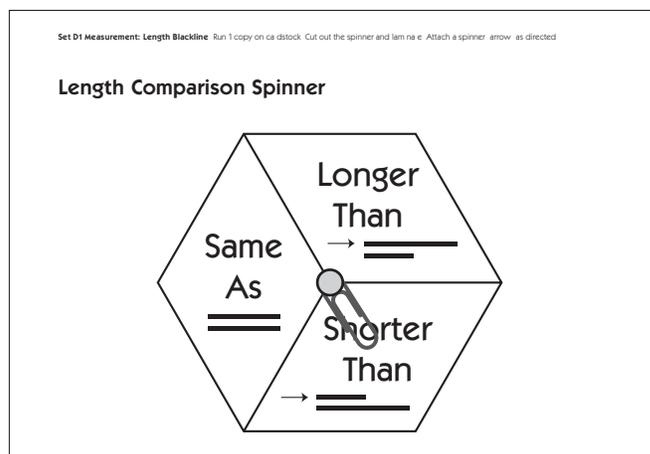
**Students** *Ours is longer than yours.*

*It's lots longer.*

*Yours is way shorter.*

3. Now spin the spinner. If it lands on “longer than” the class (in the example shown above) gets both lengths of ribbon or yarn. Give them to one of the students to hold. If it lands on “shorter than”, you get both lengths. Pick them up and hold onto them. If it lands on “same as”, both lengths go back in the bag.

### Activity 3 Compare, Spin & Win (cont.)



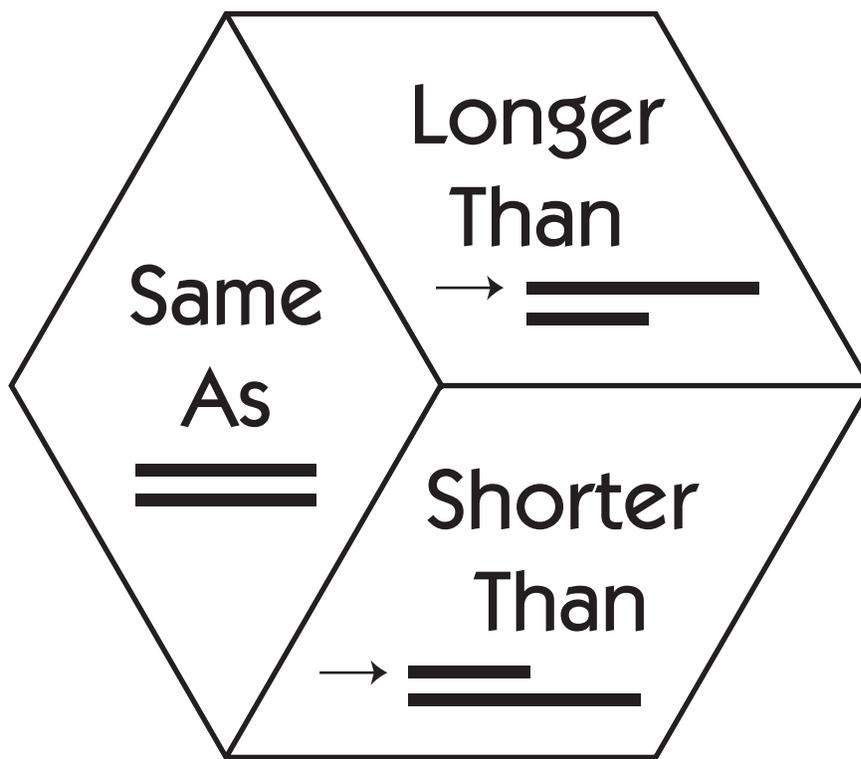
**Students** *It landed on shorter!*  
*Teacher gets to have both ribbons.*  
*Let's do it again!*

4. Repeat the steps above until you've used up all the lengths of ribbon or yarn. Lay all the lengths you won in the middle of the circle and ask one of the children to help you put them in order from longest to shortest. Then have the child who was holding the students' lengths place them in the middle of the circle, well apart from your set. Ask a couple of students to put the class strips in order from longest to shortest. Finally, compare the longest of your lengths of ribbon or yarn to the longest of theirs. Spin the spinner to determine who wins the game—you or the class. (If it lands on “shorter than”, the team with the shorter length of ribbon or yarn wins the game. If it lands on “longer than”, the team with the longer length of ribbon or yarn wins. If the spinner lands on “same as”, spin again.) Put all the lengths back into the bag so you can play the game again now or in the future.

#### Extension

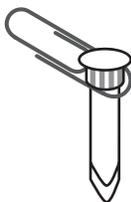
- Set up the bag of ribbon or yarn lengths and the spinner as a Work Place, and let pairs of students play the game on their own.

## Length Comparison Spinner



### Spinner-Making Instructions

1. Poke a brass fastener through a  $\frac{1}{4}$ " length of drinking straw and a paperclip. Be sure to insert the brad and straw into the large end of the paperclip, as shown.



2. Keeping the straw and the paperclip on the brass fastener, insert it into the midpoint hole of the spinner. Once it has been pushed through to the back side, bend each side of the fastener flat against the underside of the gameboard. The section of straw should serve as a spacer so the brad doesn't push the paperclip flat against the gameboard and prevent it from spinning.

3. Give the paperclip a test spin to see if it works.

