

# Student Interview Protocol Instructions

## Focus on Multiplication and Division

Attached are the masters for four problems you will use in your interview with two students. The attachments are as follows:

- Teacher recording sheet (You will need to make one copy for yourself to use for each student you interview.)
- Student copy masters of the problems (You will need to make one copy per student for them to see and record any written work that they might need to do.)

Do not discuss the problems with students prior to presenting the tasks. You may not be able to complete the interview in one sitting.

Take as many notes as you can on your recording sheet as to how the student explained their thinking. Ask questions of the students to help you understand how they made sense of the problem. This interview is a teaching interview. Your goal is to allow students enough time to come up with a solution strategy but feel free to ask guiding questions if they get stuck. The main findings from the interviews are the strategies the students use as well as the questioning strategies you use to probe student thinking and guide strategies. You should provide students with paper, pen or pencil, and some sort of counting manipulative (i.e. Unifix cubes, base-10 blocks or counting bears).

You are welcome to try to interview a pair of students at the same time. The students seem to feel more comfortable discussing their strategies when they work in pairs. If you try this approach you should give each student his or her own rekenrek. You are to use the interviews as practice for whole class discussions using similar problems.

Each question has goals and the teacher recording sheets reflect the goal for each question.

# Teacher Recording Sheet

## Interview Protocol – Focus on Multiplication and Division

**Directions:** Present these items to your student(s) one at a time. Read each question aloud as you present each problem. Ask the students to think out loud as they work. Write down the strategies they describe. You are able to use guiding questions to accomplish the desired goals. Write down what you said that guided your student(s) towards the desired goals.

1. Robin has \_\_\_\_\_ packages of gum. There are \_\_\_\_\_ pieces in each package. How many pieces of gum does Robin have?

Allow the student to use any strategy (i.e. direct modeling, counting on, recall, derived fact) they desire to solve the problem correctly.

**Goal:**

The child will be able to independently solve the problem using a strategy that makes sense.

**Teacher Goal:**

You should be able to identify the strategy that the child is using to solve the problem. Common strategies for a multiplication problem include **direct modeling, counting, or using derived facts.** Note whether or not the strategy matches the context of the problem closely or if the child chooses a more flexible approach to find the answer.

Choose number pair that is an appropriate challenge for your student. (3,6) means that Robin has 3 packages of gum and 6 pieces of gum in each pack. Write the number pair in the blanks that you show your student.

**(3, 6)**      **(7, 5)**      **(7, 10)**

2. Tad had \_\_\_\_\_ ladybugs. He put \_\_\_\_\_ ladybugs in each jar. How many jars did Tad put ladybugs in?

**Goal:**

The child will be able to independently solve the problem using a strategy that makes sense.

**Teacher Goal:**

Common strategies for measurement division problem include **direct modeling, counting, or using derived facts.** Most children will probably use a direct modeling approach. Note that this measurement division problem has no remainder.

**(15, 3)**      **(24, 4)**      **(72, 8)**

<p>3. There are _____ jelly beans in a bag. _____ children want to share them so they each get the same amount of jelly beans. How many jelly beans would each child get?</p> <p><b>Goal:</b> The child will be able to independently solve the problem using a strategy that makes sense.</p> <p><b>Teacher Goal:</b> Common strategies for measurement division problem include <b>direct modeling, counting, or using derived facts</b>. Most children will probably use a direct modeling approach. If a child directly models to solve the problem, note if he or she deals out the jelly beans one at a time or in groups.</p> <p><b>(24, 4)      (45, 5)      (36, 9)</b></p>	
<p>4. _____ children can fit into a car on the Ferris Wheel. How many cars are needed for _____ children?</p> <p><b>Goal:</b> The child will be able to independently solve the problem using a strategy that makes sense.</p> <p><b>Teacher Goal:</b> Common strategies for measurement division problem include <b>direct modeling, counting, or using derived facts</b>. Most children will probably use a direct modeling approach. Note that this measurement division problem has a remainder. The context of the problem invites the student to use the remainder to create another group.</p> <p><b>(4, 14)      (5, 37)      (10, 53)</b></p>	

(The first 3 problems are from Children’s Mathematics – CGI page 75 by Carpenter et. al., 2015)



3. There are \_\_\_\_\_ jelly beans in a bag. \_\_\_\_\_ children want to share them so they each get the same amount of jelly beans. How many jelly beans would each child get?

4. \_\_\_\_\_ children can fit into a car on the Ferris Wheel. How many cars are needed for \_\_\_\_\_ children?

