

Student Interview Protocol Instructions

Focus on Subtraction

Attached are the masters for five 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 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 Subtraction

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. Emi has _____ apples. She gives _____ of the apples to Hamza. How many apples does Emi have left?

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 separate (result unknown) problem include **separating from, counting down, 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. (14,9) means that Emi has 14 apples and she gives 9 apples to Hamza. Write the number pair in the blanks that you show your student.

(8, 3) (14, 9) (32, 17)

2. Wali has _____ pencils. Sara gives him some more pencils, now he has _____ pencils. How many pencils did Sara give Wali?

Goal:

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

Teacher Goal:

Common strategies for a join (change unknown) problem include **joining to, counting on to, 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.

(6, 9) (8, 11) (18, 27)

3. Grumpi the cat has _____ play toys. She got _____ toys for her birthday. How many toys does Grumpi have now?

Goal:

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

Teacher Goal:

Common strategies for a join (result unknown) problem include **joining to**, **counting on to**, 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.

(8, 3) (6, 7) (24, 41)

4. Ritu has _____ hockey pucks. Mac has _____ hockey pucks. How many more pucks does Ritu have than Mac?

Goal:

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

Teacher Goal:

Common strategies for a compare (difference unknown) problem include **matching** or **using derived facts**. Children do not typically use a counting strategy unless they are flexible thinkers. 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.

(6, 4) (14, 10) (53, 49)

5. Pablo has _____ grapes. He eats some of the grapes, now he has _____ grapes. How many grapes did Pablo eat?

Goal:

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

Teacher Goal:

Common strategies for a separate (change unknown) problem include **separating to**, **counting down to**, or **using derived facts**. Note if the child looks for the difference by counting forward or backwards either by ones or in chunks.

(9, 5) (16, 12) (68, 61)

6. Zainab has some books. She gets _____ more books from the library, now she has _____ books. How many books did she have to start with?

Goal:

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

Teacher Goal:

This is a very challenging problem for children who are dependent on the context to model the problem. Trial and error is a strategy that a child may choose to use. Flexible thinkers will be able to apply subtraction ideas that do not match the problem.

(2, 5)

(7, 15)

(11, 42)

3. Grumpi the cat has _____ play toys. She got _____ toys for her birthday. How many toys does Grumpi have now?

4. Ritu has _____ hockey pucks. Mac has _____ hockey pucks. How many more pucks does Ritu have than Mac?

5. Pablo has _____ grapes. He eats some of the grapes, now he has _____ grapes. How many grapes did Pablo eat?

6. Zainab has some books. She gets _____ more books from the library, now she has _____ books. How many books did she have to start with?