

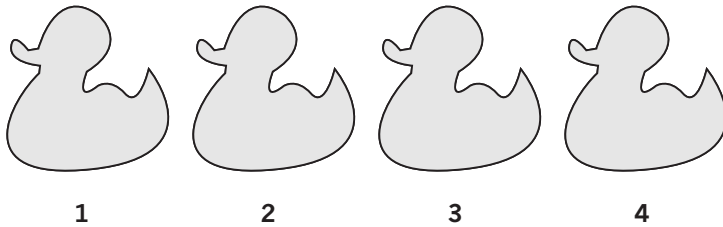
Use Logical Reasoning Act Out or Use Objects



Each pair needs: 4 cubes
(1 each of blue, red, yellow, and green)

11

Baby Jana lines up 4 rubber ducks in the tub. The red duck is behind the blue duck. The yellow duck is behind the red duck. The yellow duck is not next to the green duck. What color is each duck in the line?



FIND OUT

- **What is the problem about?** Encourage students to restate the problem in their own words.
- **What do you have to find out to solve the problem?**
The color of each duck in the line
- **Find out what the problem tells you.**

How many ducks are lined up? 4 ducks

What colors are the ducks? Blue, red, yellow, and green

What do you know about the red duck? *It is behind the blue duck.*

What do you know about the yellow duck? *It is behind the red duck. It is not next to the green duck.*

CHOOSE STRATEGIES

You can **Use Logical Reasoning** and **Act Out or Use Objects**. Use cubes to show the colors of the ducks.

TEACHING TIP

Introduce the language of logical thinking. This often includes conditional statements such as: "If ... then," "if something is true, then ...," or "if something is **not** true, then" Practice with examples such as: **If** today is Monday, **then** tomorrow is Tuesday. **If** today is Thursday, then tomorrow is **not** Sunday.

SOLVE IT

Put cubes on the ducks to show the colors.

1. **What do you know about the red duck?** *It is behind the blue duck.*
2. **If the red duck is behind the blue duck, then where can you put a red cube?** *Second in the line*
3. **What do you know about the yellow duck?** *It is behind the red duck. It is not next to the green duck.*
4. **If the yellow duck is behind the red duck, then where can you put a yellow cube?** *Third in line*

Problem 11 : Algebra

5. **If the green duck is not next to the yellow duck, then where could it be?** *Maybe it's first in line.*
Do you have to move any of your cubes? *Yes, we need to move the blue to be second, red to be third, yellow to be last.*
6. **What color is each duck in the line?**
Solution: 1 – green, 2 – blue, 3 – red, 4 – yellow

LOOK BACK

Students should read or listen to the problem again and check their work. Encourage them to ask themselves, **Did I answer the question that was asked? Is my answer right?**

EXTENSION PROBLEM

During her bath, Baby Jana lined up her 4 toy boats. A green boat is between a blue boat and a yellow boat. A red boat is in front of a blue boat. What color is each boat in line?

Solution: 1 – red, 2 – blue, 3 – green, 4 – yellow

TALK ABOUT IT

Have students talk with a partner or with a group about how they solved the Extension Problem. Students can share their different ways of thinking. Ask a question like, **How did you use “if ... then” thinking to help you line up the boats?**

WRITE YOUR OWN PROBLEM

Have students write similar problems of their own. Students can exchange problems and solve them.

PRACTICE

Similar Practice Problems: 54, 55, 56

When you give students a Practice Problem, ask questions such as, **Have you solved a problem like this before? What strategies helped you solve it?**