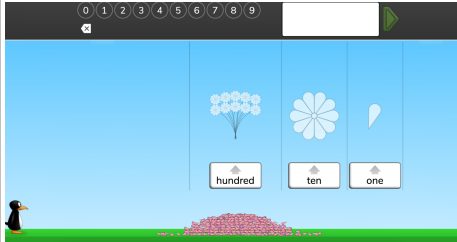


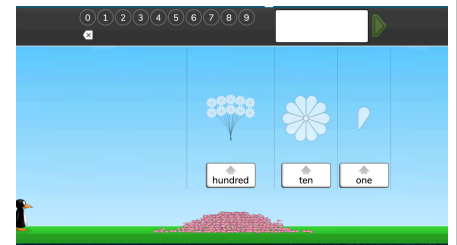
Materials

Whiteboards and markers



- Display the first puzzle in Level 3. Ask students, “What do you see? What do you think we need to do to clear a path for JiJi?”
- Try what the students suggest. (You can select numbers at the top or click on any of the place value columns.)
- Once the students see that they need to click on the columns until they are out of petals, ask which column they want to try first.
- Stop after one click and say to students, “How many petals do you think there are in all?” Have students write an estimate for the number on their whiteboards.

- Put students into groups of 2-3 and have them compare their estimates. Ask them to decide on an estimate for their whole group. Record the group estimates on the board.
- Click the puzzle again to move more petals. Say to the group, “Would you like to change your estimate? Talk as a group and decide.”
- Post the new estimates. Discuss strategies for their estimates and adjustments.
- Click again and allow groups to adjust if they want.
- Solve the puzzle. Have the group with the closest estimate to the actual number share their strategy.
- Repeat with the next puzzle in Level 3.


Directions

- Which estimate is the greatest? Least?
- How did you determine your estimate?
- Why did you change your estimate?
- Which estimate is the closest to the exact number? How did you determine that?
- How many of the petals are on each flower? How many flowers are in each bunch? How do you know?
- Why are there ten flowers in each bunch?
- Would it be easier to count the petals when they are in a pile on the ground or placed in the columns up top? Why?

Sample Questions

How does the student:

- use the change in the size of the pile of petals to adjust their estimate?
- demonstrate an understanding of place value?
- explain what happens as the flowers move to the column to the left?

What to look for