LESSON 12

Objective

Identify and add doubles to sum 20.

Common Core State Standards

- **1.OA.6** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Add Doubles

Doubling numbers is a way to show joining and an informal method to introduce multiplication within the context of addition. Children should already understand how to add numbers when they are introduced to doubling. In this particular method, children should learn that two equal numbers will double when they are added together. It is important to explore the notion of equal numbers by showing equal representations of values with manipulatives. This will informally introduce the idea of symmetry, if $a = b$, then $b = a$, and the reflexive property, $a = a$, which are important ideas for algebraic thinking.

Try It! *Perform the Try It! activity on the next page.*

Talk About It

Discuss the Try It! activity.

- Ask for examples of situations in which children might need to double a number. For example, a person might need 10 markers to play a game. How many markers would two players need?
- **Ask:** *If one ant has 6 legs, how can you find out how many legs two ants have?*
- **Say:** *A spider has 8 legs.* **Ask:** *How can you find out how many legs two spiders have?*

Solve It

With children, reread the problem. Then ask children to draw a picture of two ants that shows the number of legs. Then ask children to draw a picture of a cat that shows its 4 legs. Then have children tell how many legs two cats have altogether.

More Ideas

For other ways to teach about doubling—

- For children who need additional practice, have them draw a picture with two dogs. Ask children to use Pattern Blocks to build one dog and then two dogs. Have them count the number of legs on both dogs.
- To extend the concept, have children count the faces on a 2-cm Color Cube (6). Then have children find the double, or the number of faces on two cubes (12). Then have children double the double, or find the number of faces on four cubes (24).

Formative Assessment

Have children try the following problem.

A fish has 4 fins. Circle the group that shows how many fins two fish have in all.

A.

B.

C.

Try It! 25 minutes | Groups of 3

Here is a problem about doubling.

In science, Mark's class is studying models of ants. Mark sees that each ant has 6 legs. How many legs do two ants have altogether?

Introduce the problem. Then have children do the activity to solve the problem.

Give each group a set of Pattern Blocks. **Say:** *All insects have 6 legs. Ants are insects. Let's pretend that each ant's body is made of 3 yellow blocks and that there are legs on 2 sides of each block.*

Materials

- Pattern Blocks (6 yellow hexagons and 12 tan rhombuses per group)

1. Ask each group of children to make one ant. Have children count the number of legs. Make sure children's ants have 6 legs.

2. Ask children to make a second identical ant from blocks. Have children count the number of legs on the second ant.

3. Ask children to find the total number of legs on the two ants.

⚠ Look Out!

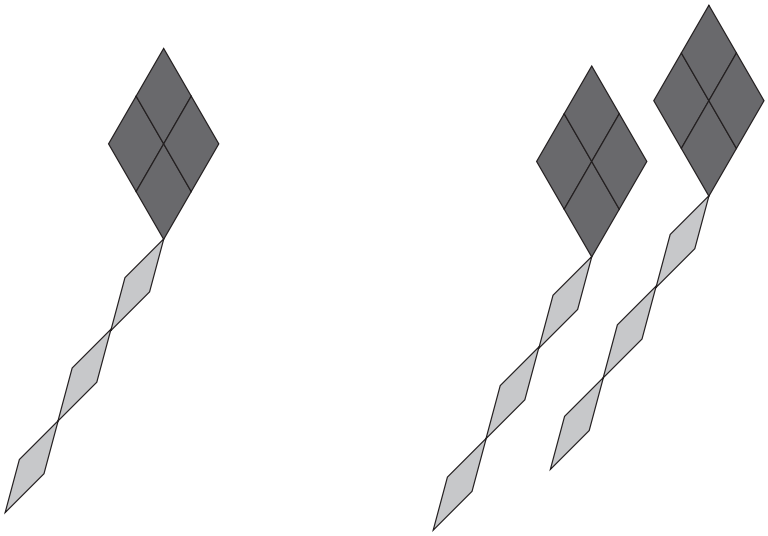
Look out for children who might struggle visually to produce the ant using blocks. Have them build the second ant on top of the first for direct comparison. Make sure children understand that values must be equal in order to double.

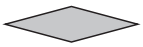
Answer Key

Use Pattern Blocks. Build the kites shown. Complete the sentences.

(Check students' work.)

1.



1 kite has ___3___  .

2 kites have ___6___ .

Use Pattern Blocks. Build a design. Draw a group of 1 and 2. Write two sentences like the ones above.

2. Check students' drawings and sentences.

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Answer Key

Challenge! If one house has four windows, how can you find how many windows are in 2 houses? How can you find how many windows are in 3 houses?

Challenge: (Sample) Draw a picture with 2 houses and count the number of windows. Draw a picture with 3 houses and count the number of windows.

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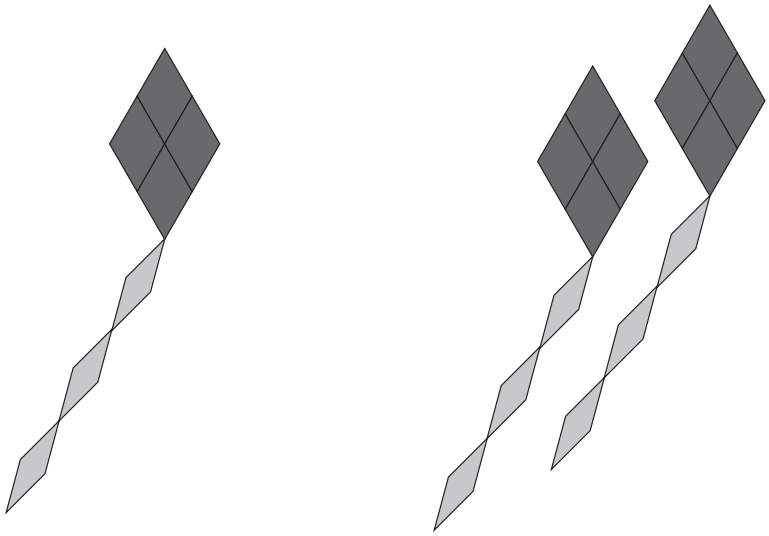
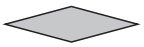
Name _____

Use Pattern Blocks. Build the kites shown. Complete the sentences.

1.



1 kite has _____  .

2 kites have _____ .

Use Pattern Blocks. Build a design. Draw a group of 1 and 2. Write two sentences like the ones above.

2.

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Name _____

Challenge! If one house has four windows, how can you find how many windows are in 2 houses? How can you find how many windows are in 3 houses?

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