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TEACHER GUIDE with Blackline Masters

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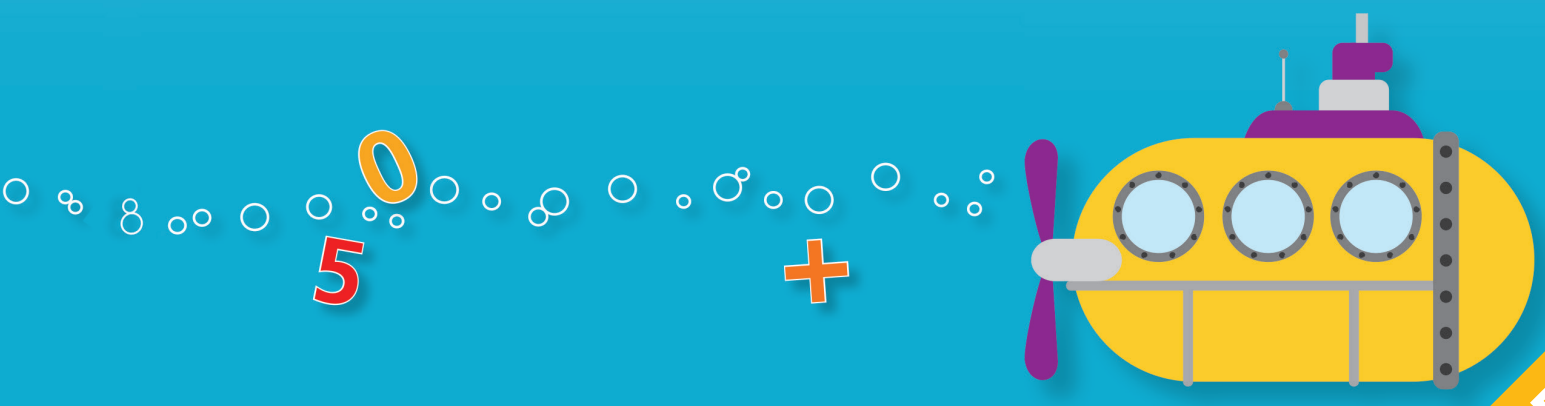
Using Osmo Numbers with MATH Expressions

Kindergarten through Grade 4



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MATH Expressions

Count by Ones

Activity Plans tie *Osmo*™ game experiences to the content of specific *Math Expressions* lessons.

GRADES
K/1
Use with Grade K Quick Practice and Lessons 5.5 and 5.13 or Grade 1 Quick Practice and Lessons 1.4 and 1.5.

ENVIRONMENT
pairs

MATERIALS
two-color counters
Secret Code Cards
Counting Chart 1–30 workmat

OSMO™ NUMBERS
Add *Level 9* (numbers 3–10),
Level 10 (numbers 6–13),
Level 11 (numbers 9–16), and
Level 16 (numbers 15–30)

OBJECTIVE
Count by ones.

CCSSM
K.CC.A.1, K.CC.A.2, 1.NBT.A.1
Mathematical Practices:
MP2, MP7, MP8

Activity 8

Set up the Osmo station with two-color counters, Secret Code Cards, and the Counting Chart 1–30 workmat out of Osmo's view.

To begin the activity, the first child views the Osmo screen to choose a poppable number. That child then places a counter over the poppable number on the Counting Chart 1–30 workmat. The second child identifies the covered number. If correct, he or she uses the Secret Code Cards to make the number and places the cards in front of Osmo to pop the number. For example, the first child chooses 15 as the poppable number and places a counter over 15 on the workmat. The second child identifies 15, uses the 10 and 5 Secret Code Cards to make 15, and places 15 in front of Osmo to pop the number 15 bubble.

- Show children the Counting Chart 1–30 workmat. Have them use the workmat to take turns as they count from 1 to 30.
- Make sure children understand how to make numbers using the Secret Code Cards. Have them make numbers such as 11 or 29.

How to Play

1. Locate the **Add** section and choose *Level 11: Watermelon Sea.* Provide each pair with a copy of the Counting Chart 1–30 workmat.
2. The first child hides the Osmo screen from the second child, secretly views it, and chooses a poppable number. He or she then places a two-color counter over the poppable number on the Counting Chart 1–30 workmat.
3. The second child identifies the number covered by the counter. If correct, he or she uses Secret Code Cards to make the number. He or she places the cards in front of Osmo to pop the number.
4. If the second child does not identify the correct number, the first child reveals the number.
5. The two children switch roles and start a new round. The activity ends when each child has played at least five rounds in each role.

Activity Options

- For Grade K children who may struggle, start with *Level 9* and gradually progress to *Level 11.*
- Challenge Grade K to use *Level 16.* To make the activity more challenging, the first child covers two poppable numbers with counters. If the second child gets both numbers correct, he or she can pop both numbers.
- For Grade 1, use *Level 16* as a review activity. Have the first child cover 3 or more numbers. If the second child gets all of the numbers correct, he or she can pop all of the covered numbers.

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MATH Expressions

Perimeter

Activities help students build fluency and mathematical reasoning skills in a game-like environment.

GRADES
3/4
Use with Grade 3 Lessons 5.1, 5.2, and 5.5 or Grade 4 Lessons 5.6, 5.7, and 5.8.

ENVIRONMENT
pairs

MATERIALS
number tiles
Perimeter workmat
Fish Box worksheet

OSMO™ NUMBERS
Add *Level 14* (numbers 12–26, even)

OBJECTIVE
Find pairs of numbers to represent side lengths of a rectangle when the perimeter is known.

CCSSM
3.MD.D.8, 4.MD.A.3
Mathematical Practices:
MP1, MP4, MP7

Activity 56

Set up the Osmo station with the Perimeter workmat and number tiles out of Osmo's view.

To play this activity, students will use the Perimeter workmat to model the lengths of the sides of a rectangle having a perimeter equal to one of the poppable numbers. For example, to pop the number 18 bubble, students may place number 8 tiles on opposite sides of the rectangle and place number 1 tiles on the two remaining opposite sides.

- Before beginning the activity, review the characteristics of a rectangle. If necessary, remind students that the opposite sides of a rectangle are the same length.
- Show students the Perimeter workmat. Tell students that the rectangle represents a box to hold fish. Explain that in this activity, students will place number tiles on the sides of the fish box to represent the lengths of the sides. The total perimeter of the rectangle must be equal to a poppable number. Remind students that the rectangle on the Perimeter workmat helps them visualize the problem and that the lengths of its sides may not be in exact proportion for the poppable number.

How to Play

1. Locate the **Add** section and begin by choosing *Level 14: Sausage Shelf.* Provide each student with a copy of the Fish Box worksheet.
2. The player chooses a poppable number to pop. Away from Osmo's view, the player places number tiles on the Perimeter workmat to represent the lengths of the sides of the fish box. The player checks to make sure opposite sides are the same length and the total of the four numbers is equal to the chosen poppable number. Then the player slides the workmat into Osmo's view.
3. If the chosen number pops, the player records the perimeter and side lengths on the worksheet. If the chosen number does not pop, the player and partner compare the number tiles to the chosen number and, outside of Osmo's view, replace number tiles as needed to make the chosen number. If the chosen number pops when the player slides the workmat back into Osmo's view, the player records the perimeter and side lengths on the worksheet. If the chosen number does not pop on the second attempt, the perimeter is not recorded.
4. Students take turns as the player and partner. Play continues until each student has recorded ten different results. If needed, students can restart the level.

Activity Options

- While students are playing, ask them to think about how dividing the poppable number by 2 could help them find side lengths for the fish box. Students may recognize that half of the perimeter is equal to the total of two of the adjacent sides. For example, if the poppable number is 26, the total of the length and width of the rectangle is 13. Knowing this, students can use any number pair with a total of 13 for the two different side lengths.

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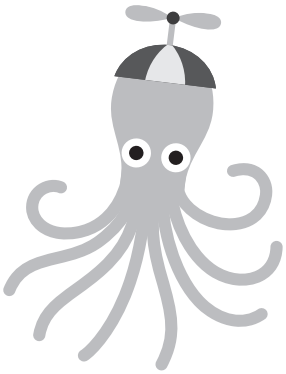
Worksheets accompany the *Osmo* Acitivities and provide space for students to record results and interactions with *Osmo*.

Name _____

Dot Bubble Pop

Use circles and 5-groups to record.

Dot Tiles Used to Pop Bubbles		Total
5-dot		
2-dot		
1-dot		



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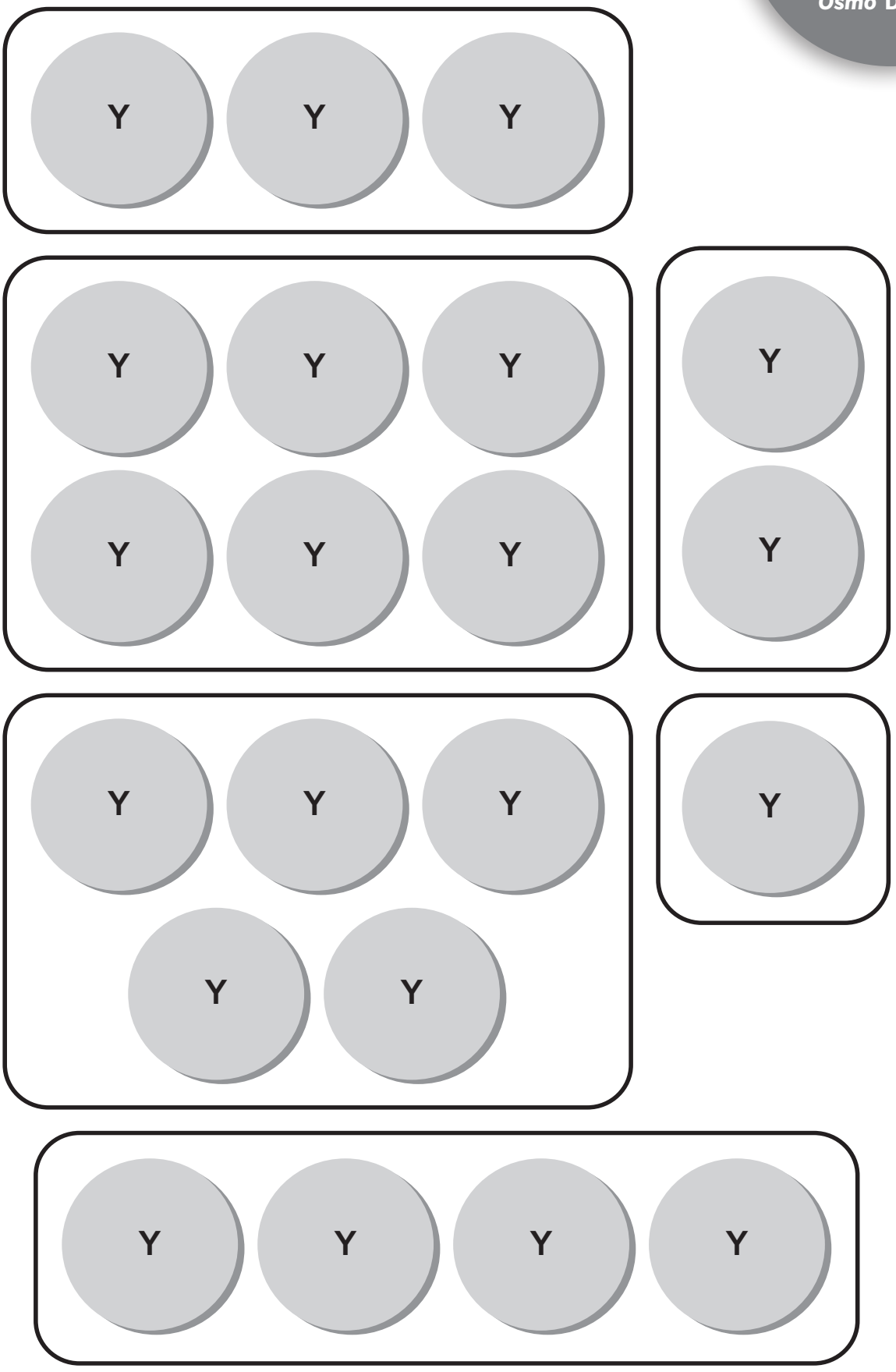
Workmats are used by students to interact with Secret Code Cards, Counters, *Osmo* Number Tiles, and the *Osmo* Device.



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INCLUDES

- **Activity Plans** that integrate Osmo Numbers with ***Math Expressions*** instruction
- **Worksheets** for recording answers and organizing work
- **Workmats** for using manipulatives, such as Secret Code Cards and Osmo tiles
- **Correlations** to ***Math Expressions*** **© 2013,** ***California Math Expressions*** **© 2015,** and ***Math Expressions*** **© 2018**

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