

Lesson 11: Which One Doesn't Belong?

Standards Alignments

Addressing 4.G.A.1, 4.NBT.A, 4.NBT.B, 4.NBT.B.5, 4.OA.B.4, 4.OA.C, 4.OA.C.5

Teacher-facing Learning Goals

- Analyze numbers, expressions, geometric figures, and computations, and identify their shared and unique features.
- Create a Which One Doesn't Belong set of items with both shared and unique features.

Student-facing Learning Goals

- Let's complete and create Which One Doesn't Belong sets.

Lesson Purpose

The purpose of this lesson is for students to analyze numbers, expressions, geometric figures, and computations, identify their shared features and unique features, and use their analyses to complete or create Which One Doesn't Belong sets.

This lesson allows students to apply their knowledge of various mathematical ideas from this course in generative ways. Students examine sets of numbers, expressions, figures, or calculations, identify both shared and unique features, and create new items to complete Which One Doesn't Belong sets.

In the warm-up, students are given a full set of items. In the three subsequent activities, they see sets with fewer given items and create more new items. Not all three activities are required. Consider the amount of scaffolding that students may need and decide accordingly. If possible, give students time to facilitate their Which One Doesn't Belong activity for another group. Expect all three activities to span two class periods, especially if students present their creations.

Note that each Which One Doesn't Belong warm-up in this curriculum is designed to meet a rigid set of criteria. Any 3 out of the 4 choices must share a common feature that is not shared by the other choice. This makes it possible to say for each item: “___ doesn't belong because it's the only one that is *not* (or does *not* have) . . .”. The negation here makes it particularly difficult to design a set of objects and common characteristics.

Students are not expected to follow these criteria. While they still look for common and distinguishing features of 4 objects, which is the hallmark of this routine, the structure is loosened to be more engaging. Students are invited to:

- find a reason why each of the 4 objects belongs
- find a reason why each of the 4 objects does not belong

In the first activity, students are given 3 items and are not asked to revisit the reasons why the first 3 items belong or do not belong after they introduce the fourth item. For the other activities, they do make this extra step to ensure that all 4 items still have a reason to belong and a reason not to belong.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Activity 3	30 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

In today's lesson, students honed their ability describe and compare different mathematical structures and create their own Which One Doesn't Belong activities. In what ways did you see students apply what they have learned from the Which One Doesn't Belong routine from their work this year? What aspects of your facilitation of this routine improved over the year and what would you like to continue to improve for next year?

Cool-down (to be completed at the end of the lesson)

 5 min

Reflection

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Student-facing Task Statement

As mathematicians, it is important to explain our thinking and listen to the reasoning of others.

Describe a time today when you learned something new, or thought differently about something, based on what a classmate said.

Student Responses

Sample response: In one of the Which One Doesn't Belong activities, one set showed only numbers. I was sure that the only reason they belong or did not belong was based on the digits being used. My groupmates helped me see that we could also look at place value, whole number versus decimals, and whether the digits are odd or even.