Diagrams and fractions – lesson 3 – Thirds, sixths, ninths...

Summary

The objective of this lesson is to introduce thirds, ninths and eighteenths combining tasks from the first and second lessons. There is no video because it is expected that the students will transfer the knowledge from the last lesson to this one, despite the new denominators.

Material: each student should receive one copy of the worksheet and each group should receive one bag of pieces (4 blues, 6 yellows, 10 greens, 5 pinks and 5 reds).

Outline of the lesson

Task 1

This is the first task with this set of pieces. But this time, there is no video to explain how to connect the pieces to fractions. It is expected that the students will be able to make this connection by themselves.

Because dividing by 2 is far more common to the students than by 3, it is expected that they will struggle more with the written form of these fractions than they did in the previous lesson.

Task 2

Similar to a

The students should have no problem with this task, because all the variations explored here were explored in previous lessons.

Task 3

Same goal from the third task f the previous lesson: explore equivalent fractions visually without mentioning explicitly the concept.

The two final items of the table explore the pink and red pieces, which were not discussed before (both represent 2/9).
The question after the table was included to verify if the students are getting that different shapes can cover the same area and represent the same fraction.

Task 4

It is not expected that the students develop a general strategy to compare fractions. Instead, we expect them to be able to use the concepts discussed in the lesson to solve the questions.

The question can be solved in a host of different ways, but the goal here is to make them explain their answers using what was done in this lesson.
You can let them use the pieces to find the answer, but encourage them to register the explanation using diagrams and fractions. An interesting question that can be posed to for reasoning is: how much is this bigger than that?

Extension

If a student finishes the tasks before the end of the lesson, you can pose questions like the last one with thirds and eighteenths, such as $\frac{1}{3}$ and $\frac{5}{18}$. Further, it may be interesting to introduce sixths with a question comparing $\frac{4}{6}$ and $\frac{5}{9}$.