

A. Teaching basic fraction concepts and operations using arc sectors

3. Comparing fractions

- 1 a. Take an arc sector with $\frac{3}{8}$ written on it and an arc sector with $\frac{2}{9}$ written on it.
b. Using these arc sectors, find which fraction (of the two) is greater than the other. Write $>$ or $<$:

$$\frac{3}{8} \quad \frac{2}{9}$$

Discussion

How can we use the arc sectors to find which fraction is greater than the other?

- 2 Use the arc sectors, and write $>$ or $<$ for each pair of fractions:

a | $\frac{2}{9}$ $\frac{3}{10}$

b | $\frac{7}{12}$ $\frac{3}{4}$

c | $\frac{3}{5}$ $\frac{5}{16}$

Operation instructions for comparing two fractions

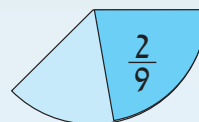
For example, compare the following two fractions:

$$\frac{3}{8} \quad \frac{2}{9}$$

- a. Take the arc sectors of $\frac{2}{9}$ and $\frac{3}{8}$:



- b. Put one sector over the other, vertex to vertex and radius to radius:



- c. We can see that $\frac{3}{8}$ is greater than $\frac{2}{9}$, and we write the answer:

$$\frac{3}{8} > \frac{2}{9}$$

To the teacher:

Like all the other topics in this chapter, the topic of fraction comparison also contains only simple exercises that can be solved using the arc sectors or the partitioning rings. All other kinds of comparisons and the rules applying to them will be studied thoroughly in the 5th grade.

Even when students already solve the problems without using the arc sectors, it is advisable to dedicate time to explanations concerning the use of arc sectors and partitioning rings. For example: " $\frac{1}{7} < \frac{1}{6}$ because in order to get $\frac{1}{7}$ we divided the circle into more equal sectors, and therefore each sector is smaller."