Grade 3	Lesson: 10-2 Using models to compare fractions: same numerator	Reference to English

Math Standard(s): 3.NF.3.d **Domain: Number and Operations-Fractions**

Content objective(s):	Language Objective(s):
Students will use models and reasoning to compare fractions with the same numerator. *我会用模型和推理来比较有一样分子的分数。*	Students will explain how they solve problems. *我会解释我怎么解答问题的。*
Essential Understanding: If two fractions have the same numerator, the fraction with the lesser denominator is the greater fraction.	**Required Academic Vocabulary for Word Wall:** **Listen:** **Read:** **Write:** **Speak:** **Sentence Frame:**
Materials: • Fraction models: Strips • Guided and Independent Practice	**Additional Lesson Vocabulary:**

Lesson:	Instructional Time: 30 – 35 minutes

Opening: (5 minutes)

T: "你已经知道怎么用分数条来比较有一样分母的分数了。分母是上面还是下面的数字？

S: "Denominator is the number on the top."

T: "没错，今天你会学习到怎么用分数条来比较有一样分子的分数。分子是上面还是下面的数字？

S: "The numerator is the number on the top."

T: "很好。我们来假装我们有一个蛋糕。谁喜欢吃蛋糕？

S: Raises hands.

T: "我来画在白板上。蛋糕被切成 3 等分。我们假设 Jerry 也有一样大的蛋糕，但是 Jerry 的被切成 6 等分。哪个蛋糕的每一片比较大？

S: "The pieces from the cake that has been cut into 3 equal parts."

T: "如果你把一样大的东西分成比较多的象等部分，会发生什么事？

S: "The size of the parts gets smaller as the number of parts increases."

T: "没错。"

Introduction to New Material (Direct Instruction): (8 minutes)

T: "Carrie 和 Alan 要吃一样多的苏菜。Carrie 吃了 ¼ 的苏菜，Alan 吃了 1/3 的苏菜。谁吃了比较多苏菜？"

- Walk around and give the students time to work.

T: "谁用了分数条来帮助你解答问题？"

S: Most students should raise their hands.

T: "很好，你怎么用分数条来帮助你做比较？"

S: "You can show a whole strip, and the two strips for the fractions that are being compared."

T: "很好，在这题里，你要比较哪些分数？"

S: "We are comparing ¼ and 1/3."

T: "没错，请在白板上画两条一样大的分数条。把一个分成 4 等分然后把另一个分成 3 等分。你可以怎么比较 ¼ 和 1/3?"

S: "You can color the first part of a ¼ strip and the first part of a 1/3 strip. Then compare the lengths of the colored parts of the strips."

T: "没错，请把一个部分涂上颜色。"

- Allow the students time to finish

T: "哪个涂上颜色的分数条比较短？

S: "the ¼ part is shorter."

T: "对，哪个比较长？

S: "The 1/3 part is longer."

T: "所以 ¼ 小于还是大于 1/3?"

S: "1/4 is lesser than 1/3."

T: "为什么?"

S: "Because the colored part of the 1/3 strip is longer than the colored part of the ¼ strip."

T: "为什么呢？"

S: "Because cutting a whole into 3 equal parts makes larger pieces than cutting it into 4 equal parts."

T: "没错，谁吃了比较多苏菜？

S: “Alan has eaten more vegetables.”
T: “没错，谁可以上来帮我写上正确的分数算式？”
S: (Student will write 1/3>1/4 and 1/4<1/3 on the board.)

Guided Practice: (12 minutes)
Use the modeling cycle:
Teacher Does:
T: “请翻到 248 页。有两条一样长的围巾。一条有 1/6 是蓝色的，另一条有 ¼ 是蓝色的。哪个分数比较, 1/6 还是 ¼?’ 所以你要找出什么？
S: “We need to find which fraction is less, 1/6 or ¼.”
T: “对，比较分数需要的重要资料是什么？”
S: “The size of the whole is the same.”
T: “没错，两条围巾一样长。你看两个分数时，注意到什么？”
S: “They both have the same numerator.”
T: “一样的分子…那是下面的数字，对吗？”
S: “No! It’s the number on the top!”
T: “你在这个格子里看到什么？”
S: “Fraction strips.”
T: “没错，所以用这些分数条，我们可以怎么找出 1/6 的围巾？”
S: “Divide the whole scarf into six equal parts; one of those parts is 1/6.”
T: “我们可以怎么找出 ¼ 的围巾？”
S: “You can divide the whole scarf into four equal parts; one of those parts is ¼.”
T: “对，我们来看下一个。它写了 1/6 小于¼. 如果两个分数的分子一样，较大分母的分数会比较小。你为什么可以这样比较这些分数？”
S: “Because the size of the wholes are the same.”
T: “没错，我有一个问题：6 比 4 大，但是为什么 1/6 没有比¼大呢？”
S: “Because when a whole is divided into 6 parts, each part is smaller than the same whole divided into 4 parts. More parts means smaller parts if the whole is the same size.”
T: “谢谢你。”

1 Students Does with Teacher:
T: “你可以帮我做第 1 题吗？”
S: “yes.”
T: “谢谢。我需要写 <,>或 =. 你怎么知道 2/4 还是 2/3 比较大？
S: “You can look at the fraction strips that are drawn on the top. From there, you can see which strips are bigger and which are smaller.”
T: “所以如果分母比较大，那么哪个分数就会比较小？
S: “Yes.”
T: “所以我要写下什么？
S: “You will write less than.”
T: “我为什么要写少于？
S: “Because 2/4 is less than 2/3. The pieces are smaller when divided into fourths.”
T: “没错。谢谢你。

2 Students Do:
T: 我需要 2 个学生来帮忙。”
S: (Watch the students draw the fraction strips on the board and ask them to explain what they are doing as they are doing it.)

All Students Do:
- Have students pair off and do 2 problems in pairs.

Independent Practice: (6 minutes)
T: 现在换你自己做第 248 页上的题目。”

Closing: (5 minutes)
T: “ (Write the fraction3/6 on the board) **这个分数里有几个相等部分？”**
S: “There are six equal parts.”

T: “没错， 3/3 里有几个相等部分？” S: “There are 3 parts.” **T: “每个分数的分子是 3, 所以每个分数代表 3 个部分。你觉得 6 个部分里 3 个跟 3 个部分里 3 个是一样的吗？** S: “No, it can not.” **T: “没错，非常好。”**
Assessment:
Guided and Independent Practice